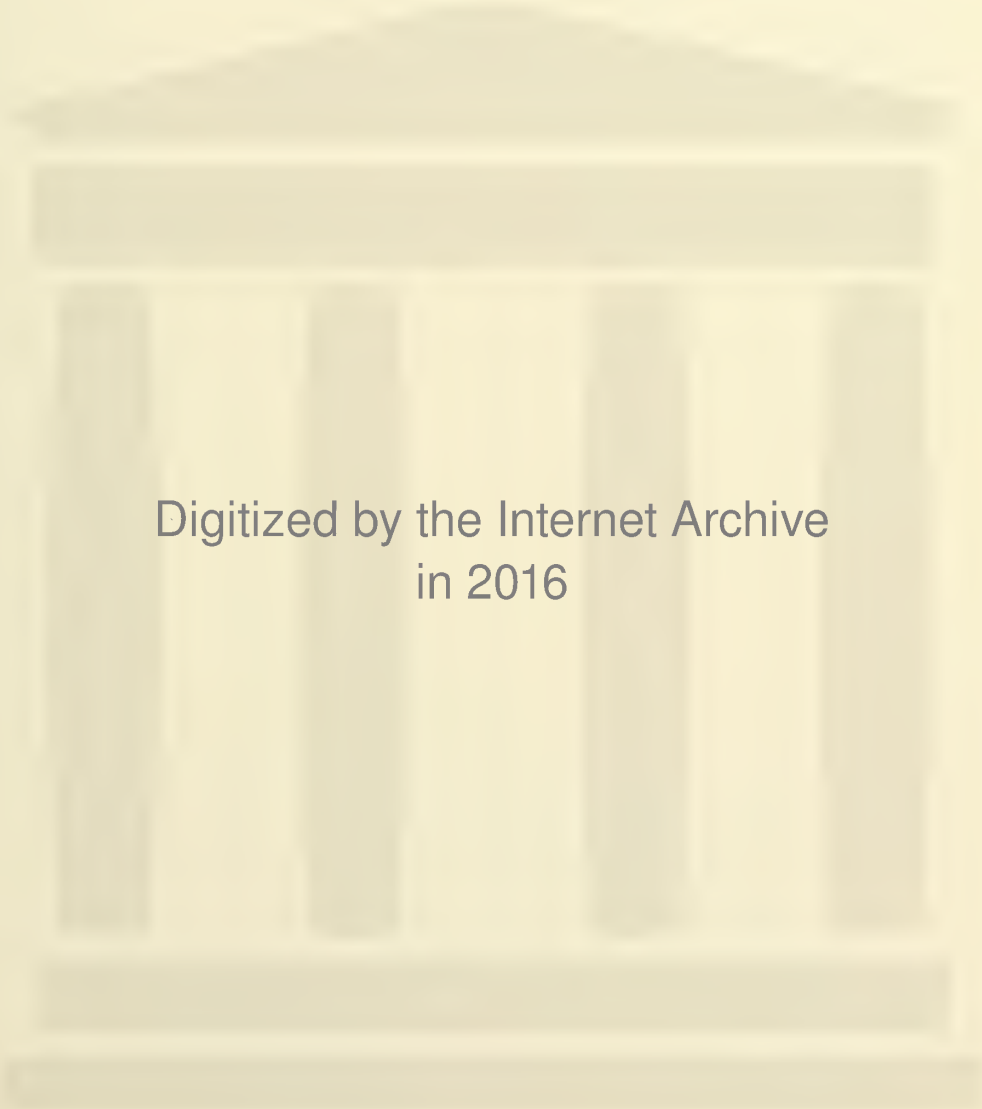


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## ENDOMETRIAL CARCINOMA

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Endometrial carcinoma is by far the most common type of cancer that begins in the corpus uteri. Sarcoma and choriocarcinoma do occur in this portion of the gyneic tract but the latter is extremely rare while sarcoma is relatively uncommon. Since endometrial carcinoma is a disease occurring most commonly after menopause and in the aged, physicians may expect to see increasing numbers of this disease because of increasing longevity in the population as a whole and in women in particular. For this reason it is apropos to review here this disease from the standpoint of age incidence, type of woman likely to develop endometrial cancer, symptomatology, methods of diagnosis, therapy principles with newer trends, and results of treatment as influenced by the time of diagnosis, concomitant disease, and the application of a planned method of therapy.

A review of the literature finds that about 75 per cent of the cases are diagnosed after 50 years of age, 21 to 22 per cent in the forties, and 2 to 4 per cent under 40 years of age. Dockerty et al.<sup>1</sup> reported 2.1 per cent of 1694 cases under forty. A review of histories of 42 cases of endometrial carcinoma admitted to Jefferson-Hillman Tumor Clinic in 6 years ending December 31, 1951 finds not a single case under 40 and only 6 under 50 years of age.

According to Corscaden,<sup>2</sup> Speert,<sup>3</sup> and

Palmer,<sup>4</sup> the type of woman most likely to develop this disease is the hypertensive, obese, relatively infertile woman with history of menstrual excess, late menopause, or varying degrees of early ovarian failure. Palmer<sup>4</sup> found the diabetic 10 times more apt to develop endometrial carcinoma. In the 42 cases reviewed, 23 were hypertensive, 14 obese, 4 diabetic, and 13 were nulliparas.

The common symptom is abnormal bleeding, usually after the menopause. Abnormal bleeding occurred in 40 out of 42 patients—33 after menopause. It is a neglected symptom both by patient and physician. It demands adequate and immediate investigation of the genital epithelial lining. Failure to have this investigation accounts for 20 cases out of 42 being classified as advanced on admission. Only 9 patients of 40 bleeding cases presented themselves for investigation within 3 months after the symptom first appeared.

The diagnosis is often obscured by commonly present myomas or polyps. The presence of myomas when abnormal bleeding is the symptom in the fifth decade of life should not mislead the surgeon into omitting curettage and adequate biopsies with microscopic study before doing hysterectomy. Failure to do this often results in a surprise diagnosis at major surgery and then the advantages of planned therapy are lost. To avoid errors of diagnosis, one must adhere to the rule of always curetting and biopsing tissues before doing major surgery when abnormal uterine bleeding is present in women over 35 years of age. To do less

1. Dockerty, Malcomb B.; Lovelady, Sim B., and Foust, Glenn T., Jr.: Carcinoma of Corpus Uteri in Young Women, *Amer. J. Obst. & Gynec.* 61: 966-981, May 1951.

2. Corscaden, James A., and Gusberg, S. B.: Background of Cancer of Corpus, *Amer. J. Obst. & Gynec.* 53: 419-427, March 1947.

3. Speert, Harold: Carcinoma of Endometrium in Young Women, *Surg., Gynec. & Obst.* 88: 332-336, March 1949.

4. Palmer, J. P.; Reinhard, M. D.; Sadugor, M. G., and Goltz, H. L.: A Statistical Study of Cancer of Corpus Uteri, *Amer. J. Obst. & Gynec.* 58: 457-467, September 1949.

denies the patient of earlier diagnosis, adequate therapy, and the greatest curative possibility.

The use of intrauterine radium for bleeding from benign endometrium at the menopausal age has been discarded by most gynecologists, particularly if surgery is not contraindicated. Taylor<sup>5</sup> and Speert<sup>6</sup> have observed that endometrial carcinoma often develops after radium has been used to control uterine bleeding in benign disease.

The fundamental objective in therapy of carcinoma is to remove or destroy cancer cells at the initial site before the disease spreads. Endometrial carcinoma usually is a disease that grows slowly and metastasizes late, offering a near ideal opportunity to excise completely or destroy all cancer cells if the diagnosis is made by the time of or soon after abnormal bleeding develops. Obviously, surgery continues to be most important in a planned therapy technique. However, because of advanced age, cardiovascular disease, obesity, and other constitutional diseases, adequate therapy will be inadvisable in 30 to 40 per cent of the cases when first seen. Therefore irradiation has gradually assumed greater importance in therapy of endometrial carcinoma. This is substantiated by the results of irradiation by Heyman<sup>7</sup> of Stockholm. He elects to treat endometrial carcinoma by irradiation alone and reserves surgery only for complications. His revised technique of intrauterine packing with small radium capsules of equal intensity gains uniform effect on all parts of the endometrial surface. He reports a relative cure rate of 61.9 per cent by irradiation alone using this packing method in unselected cases, which is comparable with surgery in unselected cases. This is an increase of 17.3 per cent for the packing method over the single tandem technique when irradiation alone is used in comparative large series. No other change in therapy plan has resulted in such a distinct increase in salvage in the last quarter of a century.

This improvement by irradiation becomes more important when it is realized that surgery alone has a limitation to its achievement and particularly when it is generally agreed by Miller,<sup>8</sup> Scheffey,<sup>9</sup> Arneson,<sup>10</sup> and others that only irradiation is indicated in very anaplastic or Grade IV tumor. When the packing technique is employed, Arneson<sup>10</sup> reports that the salvage rate is as good for the enlarged uterus as the normal size uterus. Moreover, Arneson<sup>10</sup> found that the percentage of viable cancer cells found histologically in uteri removed drops from about 50 per cent for the single tandem technique to less than 25 per cent for the packing technique. He emphasizes that the size of the uterus, the degree of cell anaplasia, the thoroughness of uniform preoperative irradiation, and the completeness of surgery are most important in prognosis.

Most gynecologists have accepted that adequate irradiation, preferably by the packing technique, followed in 4 to 6 weeks by complete surgery is the treatment of choice for endometrial carcinoma. No single factor is as important in planning therapy as definitive histologic diagnosis. In endometrial carcinoma, tissue biopsy by uterine curettings, repeated if necessary, remains the reliable method of diagnosis. There is no substitute for it.

The surgical procedure of total abdominal hysterectomy with complete removal of uterine appendages and a portion of the vaginal roof after suture closure of cervix and oviducts at fimbriated ends has been generally considered as desirable. This procedure following adequate intrauterine irradiation is considered the treatment of choice for endometrial carcinoma. Recently, Randall<sup>11</sup> and associates have reported extending surgery to include lateral pelvic

5. Taylor, Howard H., and Becker, Walter, F.: Cancer of Corpus Uteri Following Radiation Therapy for Benign Uterine Lesions, *Amer. J. Roentgenol.* 59: 976-804, June 1948.

6. Speert, Harold, and Peightal, Thos. C.: Malignant Tumors of Uterine Fundus Subsequent to Irradiation for Benign Pelvic Conditions, *Amer. J. Obst. & Gynec.* 57: 261-273, February 1949.

7. Heyman, J. (Stockholm): Improvement of Results in Treatment of Uterine Cancer, *J. A. M. A.* 135: 412-416, October 18, 1947.

8. Miller, Norman F., and Henderson, Chas. W.: Corpus Carcinoma. Study of 322 Cases, *Amer. J. Obst. & Gynec.* 52: 894-903, December 1946.

9. Scheffey, Lewis C.; Thudium, Wm. J.; Farrell, David M., and Hahn, George: Controversial Factors in Management of Fundal Carcinoma, *Amer. J. Obst. & Gynec.* 52: 529-543, October 1946.

10. Arneson, A. N.; Stanbro, William W., and Nolan, James F.: The Use of Multiple Sources of Radium within the Uterus in the Treatment of Endometrial Carcinoma, *Amer. J. Obst. & Gynec.* 55: 64-75, January 1948.

11. Randall, J. H.; Merick, D. F., and Wieben, E. E.: Endometrial Carcinoma, *Amer. J. Obst. & Gynec.* 61: 596-602, March 1951.



wall lymphadenectomy in addition to hysterectomy when the tumor is very anaplastic or Grade III or IV. They report finding viable cancer cells in lymph nodes from lateral pelvic walls in 20 per cent of the cases. This extended surgery is the only recent surgical variation and offers the profit of a few lives in the very anaplastic group.

Early ideal treatment as outlined above should give 90 per cent or better salvage rates as reported by Scheffey.<sup>9</sup>

Unfortunately this is not always possible as is shown by study of our 42 tumor clinic cases. Twenty-one of this group of 42 cases did not have the advantages of planned therapy for the following reasons:

(1) Nine had advanced constitutional disease contraindicating either irradiation or surgery.

(2) Eight had inadequate surgery before referral to tumor clinic and usually before positive diagnosis.

(3) Three had large myomas that made irradiation technically inadequate.

(4) One had pyometria that made complete treatment impossible.

Such a report is discouraging when one realizes that the physician has little to aid in preventing advanced constitutional disease and less frequent extensive local pelvic pathology that prevents or alters treatment. However, nearly half of this group did not have desirable treatment because of errors of management. The correction of this, which most commonly is incomplete hysterectomy before diagnosis, would profit the saving of additional lives.

#### SUMMARY

Carcinoma of the endometrium is reviewed from the standpoint of age incidence, type of woman likely to develop the disease, common symptoms, diagnosis, adequate treatment, and results.

Emphasis is placed on early diagnosis by microscopic study of endometrial curettings and following a planned therapy technique after diagnosis is made.

Irradiation by uterine packing of small multiple and equal foci of radium units for more than 5000 milligram hours dosage, followed by adequate extirpation of entire uterus, its appendages and the upper portion of the vagina with well-known safeguards against spillage, is advocated.

**Cancer of the Tongue**—While cancer of the tongue may be cured by x-ray or radium or at times even by electrocoagulation of the lesion or by local removal, the treatment of choice in this disease appears to be radical surgery. The entire half of the tongue involved can be completely removed and all of the lines of lymphatic spread in the floor of the mouth and in the neck can be included in the operative procedure.

Sufficient x-ray or radium therapy to be effective produces a very intensive and uncomfortable reaction in the mouth and very frequently leaves the patient with a dry, sore, irritable mucous membrane both on the tongue and on the adjacent mouth mucosa. If there are metastatic lesions in the neck, x-ray therapy is very rarely effective in eliminating these lesions. With the proper surgical technique, the patient can be left in a very comfortable condition, and although speech is slightly affected this does not constitute a serious handicap or disability to the patient. Combination therapy should never be primarily considered. If it is to be treated by radiation, the treatments should be aimed at a complete cure of the disease, both locally and along its lines of lymphatic spread. If surgery is the method selected, complete and total removal of one-half of the tongue and dissection of the neck should be carried out. Neither method done inadequately can be compensated for by inadequate use of the other method.

These patients should be well prepared in advance for their surgery and should always have intertracheal anesthesia. We prefer to do the interoral surgery first, feeling that, if the patient's condition does not justify completing the operation, there is less danger of spreading the cancer into unprotected tissue than there would be if the lymphatics were dissected first and the mouth operated on at a later date.

The tongue is split down the midline and the three muscles of the tongue divided at their attachments. The mucous membrane is divided along the edge of the mandible and the tongue and all of the contents of the floor of the mouth removed. By slightly splitting the tip of the half of the tongue that is left and doubling this back, it may be attached to the site of division of the hyoglossal muscle. One edge is then closely sutured to the edge of the tongue and the other edge is sutured to the tab of mucous membrane along the border of the mandible. This very effectively covers all of the raw surface in the floor of the mouth. A complete radical dissection of the involved side of the neck, including the submental region, is then carried out. These patients are encouraged to swallow semi-solid food and to talk as soon as they react from the anesthetic. With good intertracheal anesthesia and the use of antibiotics, the mortality rate from this operation has been reduced to a very insignificant percentage.

Taking into consideration the increased cure-rate and also the comfort of the patient, both during the period of treatment and after treatment is completed, it would appear that radical surgery was very decidedly the method of choice in treating cancers of the tongue.—*Callaway, J. M. A. Georgia, May 1952.*

## CANCER OF THE PROSTATE

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In general, adenocarcinoma of the prostate is the type malignancy which is thought of when mention is made of cancer of the prostate. This is a highly malignant lesion, frequently of very slow growth, usually appearing after the age of fifty and most often in the later decades of life. Other malignant lesions of the prostate do occur, are predominately sarcomatous, and extremely rare (Campbell).<sup>1</sup> In contrast to adenocarcinoma, these tumors generally occur in youth, and half of them in children under ten years of age. It is not the purpose of this paper to discuss the rare, malignant lesions of the prostate and no further mention will be made of them.

## INCIDENCE

Harry Culver<sup>2</sup> has stated that he believes thirty per cent of men over the age of fifty have some bladder neck obstruction and twenty per cent of such lesions are malignant. Creevy<sup>3</sup> believes there are three to eight million cases at present in the United States, and that five per cent of deaths in men past fifty years of age are due to cancer of the prostate. Eisendrath and Rolnick<sup>4</sup> report five to fifteen per cent of cases of occult carcinoma can be found following enucleation in apparently benign hypertrophy. Boyd<sup>5</sup> states that the prostate is one of the common sites of carcinoma in men above the age of forty five years. Rich<sup>6</sup> found unsuspected cancer in fourteen per cent of routine autopsies over the age of fifty years. Hugh Young was quoted by Frank Hinman<sup>7</sup> as saying that four men in every one hundred past sixty years will have cancer of the prostate.

## PATHOLOGY

Cancer begins as a malignant change in either the normal gland or in a hypertrophied portion of the prostate. Most frequently, this change begins in the posterior lobe. In early cases it is not always easy to differentiate microscopically, which may account for variation in rate of occurrence of occult carcinoma as reported from various clinics. If epithelial proliferation predominates, then the growth is soft; if the opposite, it is hard. Growth is usually limited by Denonvilliers' fascia, and therefore it is generally in an upward direction into the bases of the seminal vesicles and into the intervesicular notch. Spread of the growth beyond the prostatic capsule occurs in several ways: 1) By contiguity the growth may invade the urethra, bladder or rectum. 2) Extension to peri-ureteral tissues and in this manner compression of the ureters may occur. 3) By lymph node involvement there may be spread along the sides of the rectum to nodes along the internal iliac vein. This might explain sciatic pain because of the close relation of this area to the sacral plexus of nerves. 4) Spread may occur along the lymphatics of the seminal vesicles, vasa, and lateral aspects of the bladder to the nodes along the external iliac vein. 5) From the nodes that drain the iliacs, spread may be along the large abdominal vessels into the mediastinum and even the supraclavicular area. 6) Spread along the lymphatics to the femoral and inguinal regions is much less common but has been reported. 7) Metastasis may also be by the hematogenous route.

Why some tumors are so prone to metastasize to bone is unknown. Boyd<sup>5</sup> states that there is a rich neural supply of the prostate with communication to the bones of the pelvis and lumbar spine. He explains the frequent occurrence of metastases in these structures by a permeation of these neural lymphatics. Certainly it is true that cancer of the prostate is one of those that behave so, the bones of the pelvis and lumbar spine being most often the first attacked. It is not unusual that the only symptoms produced in a patient are those due to metastatic lesions. The changes which take place in the bones are both of osteoclastic and

1. Campbell, Meredith: Clinical Pediatric Urology, W. B. Saunders Company, Philadelphia, 1951.

2. Culver, Harry: Surg. Clin. North America 30: 127-139, Feb. 1950.

3. Creevy, C. D.: J. A. M. A. 138: 412-414, 1948.

4. Eisendrath & Rolnick: Urology, 4th edition, J. B. Lippincott, Philadelphia, Montreal and London, 1938.

5. Boyd, William: Surgical Pathology, W. B. Saunders Company, Philadelphia, 1948.

6. Rich, A. R.: J. Urol. 33: 215-223, March '35.

7. Hinman, Frank: Principles & Practices of Urology; W. B. Saunders Company, Philadelphia, 1946.



osteoplastic nature. The preponderance of bone production is generally noted. These changes give the so-called "snowballing" effect that is so often seen in x-ray examination.

Clinically, three types of patients with cancer of the prostate may be noted:

1. *The Scirrhus Type.* The great majority are of the scirrhus type and the lesion remains localized for some time and then with gradual extension. Many of these patients live a good many years and frequently long enough to die of some other cause. It was because of this large group that Colston was able to say that, although autopsy studies show an incidence of fourteen per cent, most men live long enough to die of something else.
2. *The Disseminating Type.* Here the primary growth remains small but metastases are present almost from the start and may be very extensive. In this classification the local, primary lesion may cause no symptoms but severe anemia, cachexia and pain may occur due to distant metastases.
3. *The Acute Inflammatory Type.* Here there is rapid spread to surrounding tissues and death within a few months. Apparently there is no resistance to cancer. In my experience this is more likely to occur in men in the lower age groups. Two such patients can be recalled in their fourth decade of life.

#### SYMPTOMS

Unfortunately, symptoms generally do not occur until after the lesion has spread either beyond the confines of the prostate locally or distally, as metastases. When symptoms do occur they generally fall into two groups. The most common is that of bladder neck obstruction, in which the symptoms are those that are generally associated with benign hypertrophy of the prostate; that is, slowing of the stream, frequency, pain on voiding, incontinence and retention. In the beginning, these symptoms are often so mild that the patient postpones seeking medical attention.

In the other group, symptoms such as pain in the back or sciatica on one or both sides occur. This, of course, is apt to send the patient seeking help more quickly but already the chance of cure is gone since the symptoms are not due to the primary lesion but to the results of its spread. Keyes has said that sciatica in a man past fifty is suggestive of cancer of the prostate and if it is bilateral, then it is pathognomonic.

Another group of patients have their original symptoms as hematuria which may be large or small. It is also possible that rectal symptoms, such as discomfort in the rectum, difficulty in having stools and constipation, may be the presenting symptoms but this, indeed, will be uncommon.

#### DIAGNOSIS

Diagnosis of cancer of the prostate is most often made by rectal palpation. Typically, the gland is stony hard, uneven, and gives a fixed or "frozen" feel. In the earlier case the area of hardness may be limited to one portion of the gland, such as the lateral margin of one lobe or a small area in the apex next to the urethra. The ability to feel and diagnose such a lesion may be obscured by its being surrounded by hyperplastic nodules or general hyperplasia. In some instances, where the induration is not typical, rectal palpation with a metal instrument in the prostatic urethra will aid in making the diagnosis.

Endoscopy and cystoscopy have very little to offer in the early case. After extensive infiltration of the gland, changes in the mucosa of the urethra and bladder do occur and fixation of the urethra and elevation of the vesical neck may be appreciated. Their greatest usefulness might be in ruling out other lesions.

The value of aspiration biopsy is still being debated. If material from the area in question can be obtained, then a diagnosis may be made. However, negative reports should not give one too great a sense of security since it would be quite easy to fail to attack the proper portion of the gland or insufficient material might be obtained. Biopsy of the lesion after surgical exposure would be a much more reliable diagnostic method but, of course, is a more formidable procedure and, even then, an erroneous negative report might be obtained.

Stained smears of the prostatic secretion have been used with some success. Their accuracy would be largely dependent on the availability of someone well trained and well experienced in this work. Their applicability would be more local than general.

X-rays of the bones, particularly the pelvis and lumbar spine, will give the answer in many advanced cases of the disease, and should be done routinely in all cases. X-ray of the chest and other long bones will occasionally give information.

It is now recognized that estimation of serum acid phosphatase is of no value in diagnosing early cancer of the prostate. Scott<sup>8</sup> states that in cancer of the prostate localized to the gland the serum acid phosphatase is normal. In fifty per cent of those with disseminated cancer, the enzyme value will be increased.

#### DIFFERENTIAL DIAGNOSIS

The differential diagnosis is chiefly concerned with those diseases which produce induration and hardness in the prostate and those which produce changes in the skeleton. Induration is seen in chronic prostatitis; this, usually, is not so hard as that seen with cancer and is apt to have a more elastic consistency. The finding of pus in the prostatic smear cannot be relied upon too heavily as a differential point, because prostatic pus frequently occurs along with carcinoma. The gland is not likely to be fixed in prostatitis.

With prostatic calculi, hardness may be detected in the prostate, and here the hardness is apt to be very circumscribed, and if multiple small calculi are present, the sensation of crepitation may be obtained on the palpating finger. An x-ray of the prostate will generally show shadows of calcium density in this area which will clear up the situation. However, it must be remembered that cancer may be present with both prostatitis and calculi.

In tuberculosis of the prostate, the rectal palpation of the gland may be particularly confusing. There is, however, generally a smoother and more rubbery feel and not the common stony hardness that is noticed in cancer. The ability to demonstrate tuberculous lesions in the lungs, kidneys or genitalia would, of course, be helpful in establishing this diagnosis.

In Paget's disease the x-ray changes noted in the bones are frequently confusing. There is often characteristic thickening of the skull, and prominence of the trabeculae in the latter. It would also be expected that the prostate would not show any change characteristic of cancer and the serum acid phosphatase would be expected to be normal.

In hyperparathyroid disease, changes in the bones may occur. Here the increased excretion of calcium in the urine and elevated blood calcium would be of value in

differentiation. Also, the frequent occurrence of urinary calculi in this disease and the absence of changes in the prostate would be helpful.

A course of estrogen therapy is considered an acceptable procedure to see if softening or disappearance of the area under suspicion will occur.

#### TREATMENT

To this date, the only cures that have been effected in cancer of the prostate have followed radical removal of the prostate, its capsule, seminal vesicles and a short cuff of the bladder. This can be accomplished by either the perineal or the retropubic routes but it is generally conceded that the perineal route is most acceptable. In practice, only about five per cent of cases of carcinoma that are seen are suitable for attempt at radical removal. However, James C. Kimbrough<sup>9</sup> has been able to report that at the Walter Reed Hospital they are doing radical prostatectomy on fifty per cent of the cancer cases seen at that clinic. It would seem that he has been able to impress on the medical officers the value of doing routine rectal examinations in those men beyond fifty years.

To be acceptable as a candidate for radical operation, the patient must exhibit the following:

1. The growth must be confined to the surgical capsule.
2. Extension to the seminal vesicle must be minimal.
3. The gland must be freely movable on rectal palpation.
4. There must be no extension of the tumor to the membranous urethra or external sphincter.
5. There must be no demonstrable metastases.
6. The serum acid phosphatase titre should be normal.
7. The patient should be a good surgical risk and have a good life expectancy (not over seventy years old).

Culp has listed the following complications of the radical operation:

1. Mortality, three per cent.
2. Inevitable loss of sexual powers.

8. Scott, W. W.: Year Book of Urology, 1950.

9. Kimbrough, James C.: U. S. Armed Forces Medical J., Dec. 1950.



3. Temporary urinary incontinence in most patients and in a few, complete.

4. Urethro-rectal fistula may occur.

5. Strictures at the site of anastomosis between the bladder and urethra occur in four to six per cent of patients.

That there is no unanimity of opinion in regard to the value of radical prostatectomy is exemplified by the report of Nesbit and Baum<sup>10</sup> on a survey of 1,818 cases in which they estimate that endocrine therapy, particularly combined orchiectomy and estrogen, offers almost as great an opportunity for five-year survival as does radical perineal prostatectomy. Against this is Jewett's<sup>11</sup> report that, of the cases seen at Johns Hopkins Hospital, three out of every hundred are assured a ten-year survival.

Since Huggins' discovery that orchiectomy had a very beneficial effect on the growth of prostatic cancer, palliative treatment has received a great impetus. It was soon discovered that the administration of estrogens would produce similarly good effects, no doubt due to their inhibitory action on the androgens. Again quoting Nesbit and Baum,<sup>10</sup> three and five-year survivals are significantly greater in endocrine controlled patients than in those without the benefit of this treatment. Also, the combination of estrogen and orchiectomy gives longer survival than either one alone. Interestingly enough, they were able to note that when relapse occurred after one form of therapy then the other produced symptomatic relief in thirty six per cent of cases. Their figures also indicated that best results were obtained when patients were started on treatment at the time of the first diagnosis.

The usual dose of estrogen necessary for control is the equivalent of five milligrams of diethylstilbestrol daily. Surprisingly enough, Brindler, Chase and Scott<sup>12</sup> have reported favorable symptomatic response to androgen, both to implantation of a two hundred milligram pellet of testosterone propionate and also to daily injections of twenty-five to one hundred milligrams of

testosterone in sesame oil. The explanation of this is not readily apparent.

It has been found that most patients who have symptoms of bladder neck obstruction from prostatic carcinoma will respond well to hormone therapy, either in the form of orchiectomy or estrogen or the combination. If obstruction is severe, the patient may be tided over the immediate period by catheter drainage. Should the hormone therapy fail to relieve symptoms of bladder irritation and obstruction, then transurethral prostatic resection is the procedure of choice. It may be employed one or more times over a period of years, if necessary, and generally gives good relief. The simple perineal operation is less well adapted for this condition and suprapubic enucleation is contraindicated. Dodson<sup>13</sup> says that permanent suprapubic drainage should be used only in those cases too feeble to permit more radical treatment or when the other methods of restoring bladder function have failed.

Diversion of the urine at a level higher than the bladder is not and has not been recommended. However, a personal case, in whom permanent bilateral nephrostomies were necessary because of calculus disease in the ureters, was carried along in general comfort for six years in the presence of extensive local carcinoma.

The general use of x-ray therapy for the control of cancer of the prostate has been largely abandoned. Its value in the symptomatic relief of pain due to metastatic carcinoma has been established and should not be forgotten in present day management with hormone therapy.

Flocks<sup>14</sup> has recently reported encouraging results from the use of colloidal gold isotope. This material is injected directly into the prostate gland. The cases selected for this treatment have generally been those which are not suitable for radical surgery but without evidence of metastases. He has been able to note definite regression of the local growth. However, the period of observation following the use of this treatment has not been sufficiently long to determine eventual end results. Because of the nature of this study, its use will be limited for the present.

10. Nesbit, Reed M., and Baum, Wm. C.: J. A. M. A. 143: 1317-1320 (Aug. 12) 1950.

11. Jewett, Hugh J.: J. Urol. 61: 277-280, Feb. 1949.

12. Brindler, Herbert; Chase, Wm. E., and Scott, W. W.: Arch. Surg. 61: 433-440, Sept. 1950.

13. Dodson, A. I.: Urological Surgery, The C. V. Mosby Co., St. Louis, 1950.

14. Flocks, Rubin: Meeting of the American Urological Association, Southeastern Section, Boca Raton, Fla., April 1952.

## SUMMARY

Because of the aging of the population of the United States and the frequent occurrence of cancer of the prostate, this problem is a large one.

The early detection of cancer of the prostate will depend upon frequent digital rectal examinations in the male above the age of fifty.

Although the rate of cure is still distress-

ingly low, there is some promise of better results in the future.

Radical prostatectomy offers the only hope of cure but is applicable in five per cent or less of cases.

Since the advent of hormone treatment, the rate of five and ten-year survivals has been improved.

Additional months and years of comparative comfort have been gained by the patient from hormone therapy.

## THE MALIGNANT MOLE

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It is believed that a discussion of malignant melanoma may be worth while at this time for two chief reasons: first, because its frequent precursor, the pigmented mole, is one of the most common of skin lesions; and, secondly, because there has been a rather radical change in the concept behind the treatment of this disease in the past ten years, a concept which has gained wide acceptance.

Although malignant melanoma is a rather rare disease, it is estimated that the average individual has eighteen pigmented moles. It is this frequency of the pigmented mole and the lethal character of the malignant melanoma that pose a real problem for the medical or surgical clinician seeing patients from day to day in office and hospital.

Malignant melanoma is a disease of extremely variable course. In one case it may begin its spread suddenly and, by rapid metastasis, destroy the patient's life in a few months; or it may metastasize and lie dormant for fifteen or twenty years and then become active again. More than almost any other malignant cell, that of a malignant melanoma is capable of growing in all the tissues of the body. It has been known to metastasize to the liver, the kidney, the brain, and even to the stomach wall and heart muscle.

The incidence of malignant melanoma is about equal in the two sexes, although Webster, Stevenson, and Stout report a predominance in the female of 56.8% in a series of 162 cases. It is rare in the Negro and occurs most commonly in this race in the non-pigmented areas, such as the soles of the feet and the mucous membrane of the

mouth. It is rare in the prepubertal patient and in this patient runs a much less malignant course. Pack et al., in analyzing 851 of their cases, found the occurrence of melanomas equal in the two sexes. They found the greatest incidence in the age group from 35 to 70 but the youngest was 4 months and the oldest 86 years of age. Only 10 of the 851 were in Negroes and these mostly in mulattoes and arising chiefly in the nose and mouth, nail bed, and soles of the feet. Fifteen of the 851 cases were patients before the age of puberty. None of these latter have metastasized and all have survived. They found 27% to occur in the lower extremities, 23.1% in the head and neck region, 17.9% on the trunk, and 13.7% in the upper extremity. Webster et al., in their 162 cases, report 26% in the head and neck region and 31% in the lower extremity.

The question of origin or derivation of the malignant melanoma cell is of great practical importance. It is here that much controversy has arisen. It is here also that a somewhat radical change of opinion has occurred. Is the cell of mesenchymal origin or does it come from the epithelial layer of the body? If it is of mesenchymal origin, it should metastasize first by the blood stream. If it arises from the epithelial layer, then likely it spreads by the lymphatics first and is probably held in the regional lymph node for awhile before general metastasis occurs. This would have obvious implications in regard to treatment. Does one type of malignant melanoma have origin from the mesenchymal layer of cells and another from the epithelial layer of cells? Then the treatment should differ for the two types of malignancies.



Masson has been able to adduce by a special stain fairly conclusive evidence that many of the pigmented moles are of the neuro-nevus type and are derived from the Schwann cell of the peripheral nerve fibre, the neuro-nevus probably being a caricature of the tactile corpuscles, such as the Meissner and the Pacinian corpuscles. Chandler Foot, using a different type of stain, a silver stain, has agreed with Masson that the cell of the neuro-nevus is a modified Schwann cell. Since the Schwann cell is generally conceded to be of neurectodermal origin, these data would place the neuro-nevus and the malignant melanoma arising from it in the class of tumors of ectodermal origin. In this type of malignant melanoma then, the procedure of choice in treatment should be clear. Hamilton Montgomery, disagreeing with Masson, believes that most of the pigmented nevi arise from the basal cell layer of the skin and are not of neurectodermal origin. Both these concepts of origin place these nevi in the class of tumors which spread by the lymphatics and therefore in the class which are probably held for a time in the regional lymph nodes.

In addition to the ordinary pigmented nevus, there is another nevus, the so-called "blue nevus" which appears to arise from an entirely different cell. In some of the lower animals there is an elaborate pigment system in the subepithelial tissues throughout the body. This system persists in rudimentary form in many individuals and is the derivation of the so-called mongol spot over the sacrum and of the extra-sacral mongol spots. The blue nevus is merely the development of one of the rests from the rudimentary pigment apparatus. It formerly was thought that only the Negro and Mongol races had the rudiments of this pigment system but now it is known to be present in many infants of all races and may be present in all races until adult life. The cells of this pigment system are, I believe, universally considered to be of mesenchymal origin. We may state then that the malignant melanomas arising from these are of mesenchymal origin and are true melanosarcoma, the only true melanosarcoma.

How frequently do malignant melanomas arise from the blue nevi? Montgomery and Kahler state that nine cases appear in the literature as blue nevi that have undergone

malignant change. They reviewed eight of these cases and cast doubt on the assumption that these are derived from blue nevi. They think the ninth one of these cases may be a malignant blue nevus. It appears then that the blue nevus seldom undergoes malignant change and that when it does it produces melanosarcoma.

The etiology of malignant melanomas is no better understood than that of malignancies generally. It is known that puberty and pregnancy adversely affect the course of the disease with a more rapid growth of the tumor. It is known that trauma, and especially repeated trauma, predisposes to the development of the malignant change. Partial removal of these by desiccation with the electric needle has apparently often precipitated a malignant change or at least produced a rapid spread of the lesion. The danger of such desiccation should be well known to the dermatologist. Trauma was reported in over one half of the cases of Webster et al. arising from nevi, and in 24% of those a physician produced the trauma. More than 50% of the cases of Pack and associates related a history of preceding nevus. Sixty-five per cent of the cases of Webster and associates apparently arose from a previously existing nevus.

The differential diagnosis of malignant melanoma concerns first its separation from the large group of benign pigmented nevi. This is possible only by microscopic study. The question then becomes: What pigmented nevi shall we submit to biopsy? The average number of pigmented moles in the normal individual is 18. All authorities appear agreed that we should biopsy the nevi which are situated in places where they are subjected to more or less constant irritation, the belt line, the brassiere line, and the gluteal regions, for example. All agree, I believe, that those which appear to be undergoing any change, such as increasing or decreasing pigmentation, growth and inflammatory reaction, should be biopsied. The biopsy should include at least one centimeter of apparently normal skin entirely around the lesion.

Since the blue nevus almost never becomes malignant, it is important to diagnose it clinically. We can take more chances with it and need not biopsy it as early as we might feel compelled to biopsy the others. Montgomery and Kahler state that "a tumor which is deep blue, blue black or even gray

in color, taken together with a history of onset shortly after birth without subsequent increase in size of the lesion, usually permits a definite clinical diagnosis of a blue nevus. When, however, the lesion is steel blue or black, histo-pathologic studies may be necessary to differentiate it from a malignant melanoma."

Not infrequently the seborrheic wart or verruca senilis must be differentiated from the ordinary pigmented nevus. Since it very infrequently becomes malignant and since the malignancy, if it occurs, is of the basal cell type of lesion, rarely is it necessary to biopsy it. It may be desiccated with impunity or destroyed by the curet or cautery, a treatment fraught with much danger when one is dealing with a pigmented nevus. This lesion can be recognized by its occurrence late in life, its greasy surface covered by scales easily brushed off, by its softness and apparently loose attachment to the skin, and by its fissured surface recognized under magnification.

Another lesion the differentiation of which from malignant melanoma is of some importance is the pigmented basal cell epithelioma. There is probably no way to differentiate these lesions except by histo-pathologic study. If one removes one centimeter of apparently normal skin entirely around the lesion and carries the incision well into the subcutaneous tissues, excision is the definitive treatment. Nothing further need be done. This lesion rarely metastasizes.

Goldman reports five cases of cutaneous and subcutaneous hemorrhage simulating melanoma. Webster et al. also report one such case. These may be recognized by history of trauma, sudden late appearance, and by biopsy rarely.

With the diagnosis of malignant melanoma confirmed by histo-pathologic study, what is the indicated treatment? In the opinion of most who have written on the subject, irradiation with x-ray or radium has little effect regardless of the cell type involved. If the lesion arises from the blue nevus or from the mongol spot, dissection of the regional lymph nodes should be of no use since mesenchymal malignancies usually spread first by the blood stream. Since an extremely small number of such malignancies have been reported, I think we may assume they are rare indeed and need rarely be considered in the planning of the

treatment. If we believe with Masson that most pigmented nevi are of neurectodermal origin or with Montgomery that most such nevi are epidermal in origin, we shall recognize the probability that the manner of spread is via the lymphatics. We shall, therefore, with Pack and others, follow our biopsy with regional lymph node dissection. Since there is a great tendency to retrograde spread in the lymphatics, we shall take a large area of skin surrounding the lesion, a broad strip of skin between the lesion and the regional nodes, where this is possible, and remove en bloc this tissue down to and including the fascia over the muscle. If the lesion is in the region of a breast, we shall do a radical mastectomy on this side. If the lesion is in the mid-center of the chest we shall, if we follow the more aggressive surgeons, do a bilateral radical mastectomy. In the head and neck region we shall do a radical dissection of the neck after removal of the primary growth.

The theoretical basis for this treatment is exactly the same as that for radical mastectomy in cancer of the breast. It is the assumption that malignancies of epithelial origin spread by the lymphatic channels and are held in check for a time by the regional lymph nodes.

It seems likely that x-ray and radium therapy should be used as an adjunct to the surgical treatment of melanoma just as it is in cancer of the breast. The melanoma cell is probably somewhat more radio resistant than the cell of breast cancer. In Pack's cases, surgical treatment gave 5 times the 3-year salvage and 3 times the 5-year salvage that radiation therapy did in the localized melanomas. In the cases where metastasis had occurred the salvage at 3 years was nearly 3 times greater and at 5 years  $2\frac{1}{2}$  times greater from surgery than from radiation. Pack concluded after the above analysis that it could be stated more simply that radiation therapy of any type and degree was completely ineffective.

Desiccation has been used in the treatment of malignant melanoma but all are agreed that if used it should be as radically applied as is surgery. It is difficult to see any advantage in this over surgery. The resulting defect would be more difficult to close, and biopsy beforehand would be necessary. If it is not done radically it would be quite dangerous.



Statistics in regard to prognosis are very variable. Untreated, the average duration of life appears to be 18 months to 3 years, yet some cases have been known to have malignant melanoma for many years before it becomes fatal. de Cholnoky, reporting on 26 cases followed for 5 years or more at the Skin and Cancer Unit of the New York Post-Graduate School, Columbia University, gives a 5-year survival rate of 42.3% and a 10-year survival rate of 19.2%. He compiled the statistics from 10 different authors also. In a total of 793 cases he found there was 5-year arrest in 19.2% of the cases. Pack states that, in his cases with lymph node metastasis, the 5-year salvage rate is 18% when treated by surgery.

In the prepubertal patient the salvage rate is near 100%.

#### SUMMARY

The consensus now is that the cell of the malignant melanoma is derived from neu-rectoderm or epiderm.

Pigmented moles that show growth or change in pigmentation and any mole subjected to repeated trauma should be removed with a generous margin of apparently normal skin and subjected to histopathologic study. Desiccation without biopsy is dangerous unless done radically and has the disadvantage of not permitting microscopic diagnosis.

Treatment of malignant melanoma is chiefly surgical, with x-ray as an adjunct.

Surgical treatment should include regional lymph node dissection, with dissection of the skin and subcutaneous lymphatics from the lesion to the regional lymph nodes.

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**Ovarian Neoplasms**—Ovarian neoplasms are not frequently encountered in pregnant women but should such a tumor be present it may prevent vaginal delivery. These tumors may be detected at the initial examination and should be removed at about the 14-16 week of pregnancy. Removal at this time is indicated in order that an exact diagnosis may be made, to prevent twisting and necrosis during pregnancy and to prevent obstruction of the pelvic inlet. Deliberate selection of cesarean section and cystectomy at term as a method of treating a neoplasm diagnosed early in pregnancy is unwarranted since an unnecessary cesarean section will be performed leaving a scar in the uterus, thereby subjecting the patient to the danger of rupture in subsequent pregnancies. On the other hand, failure to examine the patient and to detect a tumor blocking the pelvis prior to the onset of labor makes such a procedure mandatory. Unrecognized ovarian cysts may, after the uterus empties itself, undergo torsion on the pedicle and necrosis making an emergency operative procedure during the puerperium necessary.—*Willson, Delaware State M. J.*, May '52.

## OVARIAN MALIGNANCIES

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Since July 1945 the Department of Gynecology of the Medical College of Alabama has treated the gynecologic malignancies that have been seen in charity patients. During the six and one-half years that elapsed between July 1945 and January 1952 a total of thirty-nine malignancies involving the ovaries has been observed and followed by the Tumor Clinic of the Medical College.

Naturally, this time interval does not allow the presentation of significant data regarding survival rates and effective procedures of attempted cure. Later such data will be published, but at this time it might be well to review what has been done—both right and wrong—so that in the future we may profit thereby and ultimately raise our survival rate.

## SOURCE OF MATERIAL

These patients, both white and colored, were obtained by referral from the other clinics and house services of the Medical College; also from private physicians of Jefferson and other counties in our area. Some cases were diagnosed before they were seen in the Tumor Clinic but the majority were not.

## TYPES OF CASES

|  |    |
|--|----|
| Primary ovarian malignancy.....        | 35 |
| Secondary (metastatic) malignancy..... | 4  |

The thirty-five primary malignancies were grouped as follows:

|                                  |    |
|----------------------------------|----|
| Serous cyst adenocarcinoma.....  | 19 |
| Mucinous adenocarcinoma .....    | 8  |
| Granulosa cell carcinoma .....   | 3  |
| Squamous cell carcinoma.....     | 2  |
| Undifferentiated carcinoma ..... | 2  |
| Arrhenoblastoma .....            | 1  |

The secondary (metastatic) carcinomas were:

- 1 from endometrium
- 2 from breast
- 1 from colon

Twenty-three patients were colored and sixteen were white. This roughly repre-

sents the race incidence as is generally seen in the clinic and hospital. Fifty-one years was the average age and this falls into the sixth decade which is conceded to be the most vulnerable. Only seven were forty years of age or less, the youngest being twenty-six years and the oldest eighty-one years.

## EXTENT OF LESIONS

It was only after the accumulation of this entire group of cancer patients that it was realized what a distressing picture would be unfolded. Bilateral ovarian carcinoma with pelvic or other abdominal metastasis was present in twenty-four of the thirty-nine cases. In another eleven cases the malignancy was present in one ovary, together with pelvic or other abdominal metastasis. Therefore, in ninety per cent of the cases when first diagnosed there was ovarian (unilateral or bilateral) involvement and pelvic or other abdominal spread. Not one single case had bilateral ovarian cancer without its presence being noted elsewhere.

Only four cases, or ten per cent of the total, had neoplasm confined to one ovary and apparently still encapsulated with no obvious extension. All three granulosa cell tumors and one serous cyst adenocarcinoma made up this group.

## TYPES OF TUMORS USUALLY ENCOUNTERED

Many of the ovarian malignancies probably begin as such. Nevertheless, some undoubtedly arise in preexisting lesions that have been benign, clinically and microscopically, for a long, long time. The one patient who had an encapsulated unilateral serous cyst adenocarcinoma was known to have a twenty centimeter cyst for more than five years before she consented to operation. It was smaller than twenty centimeters for an unknown number of years. Too few patients are this fortunate.

The majority of ovarian cancers, whether they are primary or secondary, are cystadenocarcinomata, usually of the serous type. A much smaller number are of the mucinous type. A few are solid, undifferentiated growths and some are made up of specialized cells such as granulosa cells, arrhenoblastomata, dysgerminomata and squamous cancer arising from dermoids.



Because of the insidious nature of ovarian lesions too few are recognized early enough for the application of hopeful therapy.

1. *Serous cyst adenocarcinomata*:

Nineteen primary cancers of this type were seen in the Gynecological Tumor Clinic. Fifteen of these were bilateral, with pelvic and other abdominal metastasis. Three were unilateral in the ovary but had implanted on the peritoneum, or had metastasized to a more distant site. Only one of the nineteen was unilateral and still encapsulated. The spread of this type cancer is usually peritoneal rather than by lymphatic or venous routes. Many variations of histologic types are recognized and some are very slow growing. Some are retarded for surprising lengths of time by surgical removal and x-ray treatment. One thirty year old colored patient, who had bilateral serous cystadenocarcinomata with diffuse peritoneal and omental implants and liver metastasis, is still alive and feeling well after four and one-half years. She was treated by surgical resection of all the tumorous tissue possible and deep x-ray therapy. Peritoneal implants were so diffuse that seventeen thousand cubic centimeters of ascitic fluid had accumulated at one time.

Two secondary adenocarcinomas of the breast were found to have metastasized to the ovaries—one in less than two months after radical mastectomy and the other after four years. The ovarian findings really represented a part of a general carcinomatosis. One endometrial carcinoma with ovarian metastasis was seen. The treatment of it has been gratifying following irradiation and surgery.

2. *Mucinous cystadenocarcinoma*:

These cases were the next most frequently seen, with eight primary cases observed. The largest was an eighteen pound tumor removed from a twenty-six year old colored woman who insisted she knew of the presence of the abdominal mass only three weeks before operation. The entire eight cases showed peritoneal spread and abdominal metastasis. In three cases there was bilateral ovarian involvement and in the remaining five one ovary was affected.

Fewer of the mucinous cysts become malignant and it is less common that they are found to be bilateral as are the serous cystadenomata prone to be. Response to x-ray, for the most part, is poor.

There was one secondary (mucinous) involvement of the ovary which had metastasized from the descending colon. Although the patient had adequate gastrointestinal complaints, we failed to realize their significance and they were not investigated properly. The primary colon lesion was found when oophorectomy was attempted. Such "stumbling on" the proper diagnosis is not conducive to the best end results. A more thorough work-up would have led to better preparation of the patient for the type surgery that was needed.

3. *Granulosa cell tumors*:

Three granulosa cell tumors were found. All were unilateral without evidence of metastasis. Some element of doubt existed as to the malignancy of two of them, but because of their long range potentialities they were treated as such. The one case that was obviously malignant, microscopically, expired about two months following operation, even though the tumor was at first thought to be confined to one ovary.

One case out of the three granulosa cell tumors was diagnosed preoperatively and then only after intermittent observation for two and one-half years. The other two were found at operation for supposed fibroids. After reviewing the case histories, the lesion might have been more correctly diagnosed "if granulosa cell tumor had been thought of."

4. *Malignant arrhenoblastoma*:

One malignant arrhenoblastoma has been seen. Arrhenoblastomas may be malignant but fewer become so than the granulosa cell types. The cessation of menses at age twenty-one, marked hirsutism, et cetera, rendered the clinical diagnosis not too difficult. She died on the sixteenth hospital day in uremia from pelvic extension, and an autopsy was obtained.

5. *Undifferentiated cancer*:

Two undifferentiated cancers were found and these cases were considered hopeless. Biopsies were taken and palliative therapy was given.

6. *Squamous cell cancers*:

The squamous cell cancers may arise from the squamous element in dermoids. The two cases observed were far advanced and only palliation was attempted. Every endeavor should be made to find the primary site of any squamous carcinoma of the ova-

ry. Often it is secondary from a small site in the cervix or bronchus.

#### PREVENTIVE MEASURES

1. The study of over thirty-nine case histories revealed one or two isolated instances of procrastination on either the patient's or physician's part. Generally this is not the case. One cannot help but be struck with the fact that the time interval between symptoms and advanced ovarian carcinoma is exceedingly short in far too many cases. Frequent periodic pelvic examinations cannot be urged too strongly. Herein lies the only chance of prevention.

2. The removal of enlarging cystic ovarian tumors and all solid ones is again stressed. In order to rule out the benign retention cysts it is helpful to remember the report of Miller and Willson.<sup>1</sup> In their study of four hundred sixty-one small cystic tumors measuring five centimeters or less in diameter, ninety-six and nine tenths per cent were simple retention cysts. In the future the use of culdoscopy may be so extended that all ovarian enlargements may be viewed.

3. Although it is a good policy to open and inspect ovarian tumors at the time of operation in an effort to find signs of malignancy, it is also mandatory to follow up with microscopic examinations. If an unexpected cancer is found, a mature judgment must be given as to the advisability of further surgery and to what extent it should be carried. The type of lesion and the individual circumstances will have a direct bearing on the surgery and the question of x-ray.

One of our cases had undergone an oophorectomy three years prior to being seen in the Tumor Clinic. The pathology report revealed a serous cystadenocarcinoma that had appeared benign at the operating table. Although she was postmenopausal (age 55), no further surgery or irradiation was done. The bilaterality of this tumor manifested itself in the opposite ovary three years later and was hopelessly advanced when seen.

4. The question of removing normal ovaries while doing abdominal surgery on the postmenopausal woman has been widely discussed. If one ovary is pathologic the removal of the other is justified. Should both

appear normal the chances of developing ovarian cancer are statistically very small. If the patient's age is forty-five years she has three chances in a thousand to develop ovarian cancer, even if she lives another forty years.<sup>2</sup> Because of other metabolic functions of the postmenopausal ovary, their wanton removal is not justified on the basis of preventive medicine.

5. No characteristic signs or symptoms can be looked for in attempting to make an early diagnosis. Women have learned the significance of abnormal vaginal bleeding but this is seldom an early sign. Further education as to the necessity of a bimanual examination must be carried out. Most of our cases had ascites because of the large number that had peritoneal implants. Some of these were treated by their physicians for cirrhosis, heart failure, et cetera, for considerable periods of time before a pelvic examination was made.

#### TREATMENT

Surgical excision of the ovaries, tubes and entire uterus, together with irradiation, is the basis of treatment. We are becoming more aggressive in our approach to the problem. Cases which have seemed inoperable have become operable following deep x-ray therapy. Though this may not be curative, we are sometimes amazed at the relief these patients experience. They may remain symptom free for long periods of time. Cancerous implants and extensions are also removed whenever possible. Our experience with nitrogen mustard and similar acting compounds has been quite limited. Two cases were not appreciably benefited.

#### SUMMARY

The various types of ovarian malignancies seen in the Gynecological Tumor Clinic at the Medical College of Alabama are listed.

Attention is called to the widespread character of these lesions when first seen.

It is hoped that cases will be detected earlier by reemphasizing the necessity of frequent periodic bimanual pelvic examinations.

Some seemingly hopeless cases have received worth-while palliation following therapy.

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## BILATERAL CARCINOMA OF THE BREAST

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In reviewing the cases of carcinoma of the breast from the State Tumor Clinic at the City Hospital and the Department of Radiology at the Mobile Infirmary, we were particularly impressed with the number of patients admitted with a diagnosis of bilateral carcinoma. The five cases recorded here were all from the State Tumor Clinic series. All were of the non-simultaneous type and varied in their interval of recurrence up to more than twelve years.

Many authors have commented on the better than average survival rate following a second radical mastectomy for non-simultaneous bilateral carcinoma of the breast. In these five cases the interval of recurrence was found to be less than two months in one case, less than a year in another, and four to twelve years in the other three. Obviously the cases in which recurrence occurred so promptly should by the nature of the cancer effect a most unfavorable prognosis.

At the present time it is estimated that 4% of adult females will develop carcinoma of the breast. This location is considered to be the most frequent site of malignant change, accounting for 15,000 deaths annually. Based on the average increasing age of the general female population, and since carcinoma of the breast occurs most often in the 40 to 60 age group, it appears that carcinoma of the breast will continue to increase in incidence and that we should be even more alert to biopsy suspicious lesions, particularly those in the remaining breast following previous surgery on the opposite side.

All of us are familiar with the methods of spread via the blood stream, the lymphatics, and direct extension to contiguous tissue. In reviewing bilateral carcinoma we are particularly interested in lymphatic spread and in attempting to interrupt these pathways prior to the dissemination of tumor emboli medially. Fortunately, the spread of these emboli is primarily via the subareolar and subcutaneous plexuses and thence to the regional axillary nodes where

they are resected in the conventional type of radical mastectomy. Several other main routes have been noted over

- A. Transpectoral and retropectoral groups,
- B. Internal mammary nodes and mediastinum, and
- C. Trunks draining to the external mammary, scapular, central axillary and subclavicular collections of nodes.

The less commonly involved pathways include those to

- A. The opposite breast and axilla,
- B. Inguinal and cervical nodes, and
- C. Upper abdomen, liver and diaphragm.

Thus it is the less commonly involved pathways that we are especially interested in at this time and their relationship to bilateral spread to the opposite breast. For many years a retrograde flow has been recognized and during recent years several studies of lymphatic spread of breast cancer agree that when the radial lymphatic channels are plugged by tumor cells retrograde lateral and vertical spread may occur.

The problem of bilateral carcinoma of the breast seems important to us since from the various studies reviewed the incidence of carcinoma occurring in the opposite breast is approximately two times as great in patients who have proved carcinoma in one breast as in the general female population. Thus it seems important to urge physicians to be highly suspicious of either symptoms or signs noted in a remaining breast for the possibility of malignant degeneration, and to point out again that should a malignant lesion occur in the remaining breast the prognosis is not too unfavorable if prompt surgical treatment can be instituted.

Haagensen and Stout found an incidence of 9.1% of bilateral carcinoma of the breast in their series of patients. Marshall and Hare of the Lahey Clinic reported an incidence of 3.3%. Harrington at the Mayo Clinic, in reviewing 6558 cases, found an actual incidence of 3.4% which were oper-

able and estimated an equal number of cases was not considered amenable to surgery due to distant metastases from the side operated on initially. In our cases the incidence is a great deal higher if we consider only those cases seen in the State Tumor Clinic, and is of course out of proportion to the general average if we consider only those cases admitted during the year 1951.

It does seem of some significance that in a series of only 61 cases 5 would be diagnosed as bilateral carcinoma of the breast, and emphasizes the possibility of spread to this organ. It is also of some interest that during the years 1950-1951 no case of bilateral carcinoma of the breast was reported among the private cases from the Department of Radiology at the Mobile Infirmary and only one case was suspected of bilateral involvement. This suspected case was subjected to a radical mastectomy on the involved side, exploration of the mediastinum and a simple mastectomy on the uninvolved side.

Of the five cases readmitted to the service only one (20%) was considered to be operable. Of the other four cases a simple mastectomy was done in one case for the relief of pain and to remove a massive necrotic ulcer. The three remaining cases were given palliative x-ray therapy.

Although the duration of symptoms in these cases varied from one to six months, an operability rate of only 20% is below the operability reported by Harrington in the Mayo Clinic series. It is our feeling that could these patients have been followed more closely with frequent self examination of the remaining breast and axilla, the operability rate would have been higher and the survival rate proportionally increased. Harrington, in reporting his non-simultaneous group of patients, found that the prognosis appeared better than in the unilateral cases but pointed out that his series of 155 cases was relatively small. He also noted that the incidence of axillary metastasis was also lower in a larger number of patients in this group and that the grade of malignancy was lower in a larger per cent of the patients studied. He concluded that all of this indicated that even though carcinoma does develop in the remaining breast the surgical results may be quite satisfactory. In our patients axillary metastasis and spread to distant foci were noted in 4 of 5 cases on admission, rendering them inoperable.

Cliffton and Young, in a series of 332 cases

of carcinoma of the breast, found ten cases with a bilateral non-simultaneous spread. In their five-year follow-up of these cases they found seven patients living and well after the second radical mastectomy. In their overall five-year survival rate they found 54.9% living and well. In five cases of bilateral carcinoma of the breast of the simultaneous type, all of which had been subjected to bilateral radical mastectomy, the end results were poor, with three patients surviving less than one year and the other two lost to follow-up.

Harrington, however, reported a somewhat more favorable outlook in his cases of the simultaneous type and found 61.5% five-year survivals when no axillary metastasis was found at the time of surgery and 17.9% five-year survivals when positive nodes were found on pathologic examination, his average five-year survival rate being 28.8% for the simultaneous group which is lower than that noted in the unilateral group and also for the non-simultaneous type, but again emphasizes that these cases, although the salvage rate is low, should have prompt and energetic surgical treatment.

#### SUMMARY

1. During the next few years the incidence of carcinoma of the breast should increase proportionally with the increasing average age of the female population.
2. The prognosis in patients developing non-simultaneous carcinoma of the breast is favorable if patients are treated early.
3. Special care should be exercised in examining the remaining breast, and any suspicious sign or symptom should dictate an immediate biopsy for the possibility of malignancy.

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## THE LABORATORY PHASE OF CANCER CHEMOTHERAPY

HOWARD E. SKIPPER

Assistant Director, Southern Research Institute  
Birmingham, Alabama

By way of introduction, I wish to indulge in a little philosophy. It has not been too many years since "vital forces" were considered by some to control the cell and the pleasantly-shaded histological pictures viewed under the microscope. No small effort went into the trial and error development of means for staining cells and then came the real accomplishment of correlating morphology with certain changes evidenced in disease. The fund of knowledge relating tissue and cell form and appearance to health and disease has been invaluable in the practice of medicine. But there are instances where the custodians of this specialty temporarily overlook the fact that all physiologic functions as well as pathologic disfunctions are the result of chemical reactions. When one strays from the use of chemical and physical laws in attempting to describe biologic phenomena, either normal or pathologic, "ghosts" seem to creep into the cell as controlling agencies. Our lack of knowledge of the controlling mechanisms for the thousands of simultaneous chemical reactions taking place in the normal cell is appalling, and our inability to describe disease in terms of chemical events must be readily admitted. The complexity of this task has been emphasized by results obtained with isotopically-labeled materials which show that fats, proteins, carbohydrates, vitamins, enzymes, antibodies, hormones, chromosome constituents, in fact, all cellular components are continually being synthesized and degraded. The fundamental difference between the normal and cancer cell probably lies somewhere in these multitudinous anabolic and catabolic processes. There are many able scientists who believe that we must understand more about the chemical events leading to growth and must uncover the aberrations in these processes responsible for uncontrolled growth before there is a reasonable chance of developing means for control of cancer. Hence, these workers devote their efforts toward the most important objective of trying to demonstrate qualitative differences in the metabolism of normal and cancer tissue.

Another segment of cancer researchers point to the history of bacterial chemotherapy as evidence that by hard work and judicious planning (and a certain amount of luck) there is a reasonable chance of uncovering useful anti-cancer agents by trial and error methods.

I must admit that I am a "middle-of-the-roader." It seems to me terribly important to follow up fundamental research attempting to understand the step-wise processes of growth and factors affecting abnormal growth, but equally important is the effort to bypass or shortcut this slow and tedious process and attempt to discover by Edisonian methods useful agents which might immediately be used in the treatment of cancer. In the short discussion that follows, I have put down a few facts which describe the experimental chemotherapy approach which is being used in a number of laboratories today, including our own, and then a very short discussion of fundamental approaches to the study of the mechanism of action of chemotherapeutic agents, which makes up a fair portion of the effort that our laboratory is placing on the cancer problem.

### EXPERIMENTAL CHEMOTHERAPY

It seems at the onset quite apparent that there is need for some means of screening compounds for potential value in control of human cancer. It is impractical to screen a large number of compounds against cancer in human patients for obvious reasons. There are those who state that there is little reason to believe that drugs which affect cancer in animals will be effective in man. Others in a pessimistic vein believe that there will be required a different drug for control of each type of cancer, if indeed any curative agents are ever developed. Certainly it must be admitted that, after a considerable amount of animal screening of candidate cancer chemotherapeutic agents, no more than a few temporarily effective agents have been uncovered. But in defense of this approach, I should like to point to the correlation between positive results obtained with screening procedures using

mouse leukemia and clinical experience with the same agents. Nitrogen mustard, triethylene melamine (TEM), urethan, and x-radiation have all been shown to increase the life span of mice with certain strains of transplanted leukemia.

Temporary remissions in certain chronic leukemias in man have also been shown to follow therapy with these agents. The so-called "anti-folics," which more accurately should be termed "anti-tetrahydroforylpteroylglutamic acids," have a profound effect on mice with certain acute leukemias, increasing life span of treated over untreated controls by as much as 200%. We are all aware by now of the temporary remissions produced in some children with acute leukemia by treatment with aminopterin or A-methopterin. The above correlation between chemotherapeutic results with mouse leukemias and human leukemias leaves little doubt that mice screening in this field is worth while. It cannot be said that similar correlations exist between chemotherapeutic response of solid tumors in animals and man. However, the difficulty in assessing chemotherapeutic response of human neoplasms other than lymphomas and the fact that usually only the most advanced inoperable cases have been extensively treated with chemotherapeutic agents makes it difficult to say whether mouse screening with solid tumors is an accurate guide for selection of candidate chemotherapeutic agents for man or not. It hardly needs to be stated, however, that discovery of an agent which would cause complete necrosis of mouse sarcomas or carcinomas without excessive damage to host tissue would be an exciting and welcome observation.

Several laboratories in this country are now geared to rapid screening of potential chemotherapeutic agents using mice and rats. The most active groups can assay as many as 50 compounds per week. Thousands of materials have been screened. Theoretically there is an almost infinite number that might be tested for effectiveness. Today there is a handful of agents which significantly inhibit certain mouse and human neoplasias. These substances generally, when given in effective doses, cause considerable intestinal and bone marrow damage. This lack of specificity, along with the general development of drug resistance by neoplastic tissue, has been the cause of repeated disappointments following the ap-

pearance of new chemotherapeutic agents in the cancer field. It is now quite apparent that one of the biggest problems facing the cancer chemotherapist is the development of information which would elucidate the mechanisms of development of resistance to therapy. Recent experiments by Law at the National Cancer Institute have indicated that in a leukemic population of cells there exists a small number of mutant cells which are, before administration of any chemotherapeutic agent, naturally resistant to that agent. These fascinating studies showed that certain anti-cancer agents act as means for chemical selection of the resistant cells by a process of killing off the susceptible cells until one ends up with a strain of leukemia which is completely resistant to the agent which originally inhibited the susceptible leukemic cells. It seems possible that if one were able to prevent this development of resistance or, in other words, to inhibit simultaneously the resistant mutants as well as the susceptible leukemic cells that the clinician could use the presently known cancer chemotherapeutic agents to much greater advantage. This is a field of tremendous importance and one which is receiving a considerable amount of attention at the present time.

#### STUDIES ON THE MECHANISM OF ACTION OF TEMPORARY ANTI-CANCER AGENTS

A problem which has confused scientists interested in cancer chemotherapy for a number of years is the fact that such diverse agents as x-radiation, urethan, nitrogen mustard, anti-folics, cortisone, and ACTH all possess the ability to inhibit preferentially certain cancer cells for a limited period of time.

If one could determine the mechanisms of action of these materials, then it would be possible to concentrate on the biochemical system or systems involved and to begin logically the approach to the development of therapy which might be more effective. If it could be said with surety that all presently known anti-cancer agents affect nucleoprotein (chromosome) metabolism or coenzyme metabolism, then many more able workers would probably devote their time and effort to research aimed toward working out the detailed chemical events involved in these metabolic systems. Such detailed information would perhaps provide leads as to differences in cancer and normal metabolism. Knowledge as to the



qualitative differences or extreme quantitative differences existent in malignancy is of utmost importance if we are to devise molecules with increased cytotoxic specificity for neoplastic cells.

Present evidence suggests that A-methopterin prevents the conversion of folic acid to citrovorum factor, a coenzyme essential to nucleic acid synthesis. Diaminopurine and 8-azaguanine which are temporary anti-cancer agents in mice probably affect nucleic acid or nucleotide metabolism. X-radiation profoundly inhibits nucleic acid synthesis. Nitrogen mustard reacts with nucleotide purines and pyrimidines and there is evidence that this material causes gene changes. We have recently related the growth-inhibiting action of urethan in *E. coli* to purine metabolism. In view of these facts and much other data, I believe it is safe to suspect nucleotide and perhaps nucleoprotein metabolism as a site where a number of temporary anti-cancer agents may exert their primary effects.

Cancer is thought by many to be a disease of mutation where, as a result of gene changes, certain enzymes are not produced or new enzymes come into play (genes are now considered to exert their profound biologic effects by influence on enzymes which act as catalysts for biochemical reactions). There is another school of thought which blames cancer on intracellular viruses. This perennial argument between the "mutationists" and the "virologists" may turn out to be one of definition since genes and virus particles are both nucleoprotein in nature and probably influence protein configuration in somewhat similar manner.

The fact that certain anti-cancer agents seem to be affecting metabolism of nucleoprotein moieties and like compounds is to me a most interesting one and is bringing together the efforts of the theoretical geneticists, biochemists, biologists, and the organic chemists and chemotherapists who are avidly seeking more effective anti-cancer agents.

In summary, I should like to suggest that experimental cancer chemotherapy is making slow, but definite, unmistakable progress and that this progress is contributing to the understanding of normal and malignant growth. We are approaching the stage where the present knowledge of the sites of action of anti-cancer agents and the few available details regarding chemical events

leading to growth are going to be more and more useful in suggesting potential chemotherapeutic agents. The use of many specialties will aid in the future efforts and it is unwise (if one does not like to eat his own words) to belittle the approaches of the fundamentalists or the Edisonian researchers. When control of cancer is accomplished, the final development can probably be traced to the fusion of efforts of both.

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## PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Case Presented by

Amos C. Gipson, M. D.

F. McClain-Nolen, M. D.

This is the case of a 2½ year old white male who was in his usual good health until about three weeks before admission to the hospital, when he developed some abdominal pain and became quite fretful. No history could be obtained regarding a recent or previous infection or injection; in fact, this child had never received an injection. About a week before admission, anorexia became a feature and four days later clinical jaundice was present. Following this, clay-colored stools and dark colored urine were noted and the abdomen was steadily becoming more distended. Pedal edema, though mild, was present and the child had some fever, the amount being undetermined. At no time during this three week period was there any nausea, vomiting or diarrhea.

*Past History:* This child had never enjoyed good health. He had manifested an allergy to cow's milk which produced a generalized eczema severe enough to require that his head be shaved ten times during his first two years. However, for the past 3 or 4 months he had been tolerating milk.

*Family History:* Of interest may be the fact that two of his uncles were said to have died of catarrhal jaundice.

*Physical Examination:* This was a well developed and well nourished child, acutely ill, listless, and drowsy but apparently oriented, though unresponsive and with a fever of 102.4. The abdomen was greatly distended, with a fluid wave present and a sharp liver border palpable three finger breadths below the costal margin. The skin

and sclera were highly icteric and there was pitting edema of the lower extremities. The lips were dry and the tongue heavily coated, with the odor of the breath being the classical fetor hepatis. The spleen and the lymph nodes were not palpable.

*Laboratory Reports:* Hemoglobin 9 Gm., red blood cells 3.92 million, white 11.9 thousand, polymorphonuclears 61%, lymphocytes 36%, monocytes 3%, and eosinophiles 1%. The icteric index was 90 units and the urine was positive for bile consistently and showed 2 to 6 granular casts. Serology was negative. Rumple-Leeds tourniquet test positive.

*Progress in the Hospital:* This was thought to be a case of acute infectious hepatitis but the presence of ascites and pedal edema suggested more severe liver involvement, with the possibility of acute yellow atrophy being considered as a diagnosis.

At the end of the first 24-hour period the child had become comatose but remained restless throughout his hospital stay. Synkamin was given daily in an attempt to increase the prothrombin activity. A high carbohydrate diet, including liberal amounts of stick candy, was given to prevent dehydration and to furnish electrolytes and glucose. Blood transfusions were given to correct the anemia. ACTH was given slowly intravenously in fluids in the dose of 20 mgm. per day for two days and then ACTH 10 mgm. was given intramuscularly every six hours; this was apparently without benefit even though three cases have been reported in the recent literature as responding dramatically to ACTH therapy. Aureomycin was given intravenously daily for two days and then orally. (Three reports were reviewed in the recent literature relating successful treatment in 3 cases of acute fulminant hepatitis.) The temperature of 102.4 on admission dropped to range from 98.6 to 100.6 during the first four days. A paracentesis was done with the removal of 1020 cc. of clear straw-colored fluid, after which the liver was not again palpable. The icteric index rose to 190 units. A steady oozing of blood from the gums, tongue, and intestinal tract developed, the temperature rose, and the child expired at 4:10 P. M. on his ninth hospital day.

An autopsy was done which attributed the cause of death to subacute red atrophy of the liver, with secondary hemorrhages

in the pleura and pericardium, along with a biliary nephrosis.

This is usually a benign disease thought to be caused by a virus and is probably infectious since it is sometimes seen in epidemics. It occurs most often in the fall and winter months and is seen most between the ages of 3 to 15 years. In rare instances the infectious hepatitis rapidly progresses to a serious acute yellow atrophy of the liver.

#### AUTOPSY

(Performed by J. D. Bush, M. D.)

#### *Clinical Diagnosis*

Infectious hepatitis or acute yellow atrophy of the liver.

#### *Final Diagnosis*

Liver: Diffuse necrosis of infectious hepatitis (subacute red atrophy).

Lungs: Interstitial lobular pneumonia.

Lungs: Diffuse hemorrhage.

Kidneys: Passive hyperemia.

Spleen: Passive hyperemia.

Lymph Nodes: Chronic non-specific lymphadenitis with reticulo-endothelial hyperplasia.

Kidneys: Biliary nephrosis.

Body Generally: Icterus.

#### *Comment*

I believe this represents a case of subacute infectious hepatitis with marked destruction of the liver cords of the liver tissue. There is some evidence of regeneration and fibrosis.

#### *External Examination*

The embalmed body is that of a well developed, well nourished, white male 85 cm. in length. The hair is white. The skin of the entire body is yellow. There is marked edema of the trunk and extremities and slight edema of the face. There are irregular hemorrhages beneath the skin of each antecubital fossa and in each groin. Over the left internal malleolus an unsutured incision measures 1.5 cm. in length. An unsutured midline incision of the abdomen measures 13 cm. in length. Through it loops of bowel protrude.

#### *Peritoneal Cavity*

When the primary incision is made, the fat of the anterior abdominal wall above the umbilicus measures 1.5 cm. in thickness. There is no fluid and there are no adhesions in the peritoneal cavity. The

cecum and ascending colon are attached by a relatively long mesentery so that they do not lie retroperitoneal. The stomach is greatly dilated. Diaphragm lies at the right fourth, left fifth, ribs.

#### *Pericardial Cavity*

Pericardial cavity contains a few cc. of clear yellow fluid. There are no adhesions present.

#### *Pleural Cavities*

Pleural cavities are free of fluid and adhesions.

#### *Heart*

Heart weighs 70 grams. There is the usual amount of subepicardial fat. The myocardium is flabby and pale grey-red. It measures in thickness, left ventricle 1 and right ventricle 0.2 cm. There is one linear subepicardial hemorrhage on the left side of the intraventricular septum. The valves measure, in circumference, tricuspid 7, pulmonary 4, mitral 6, and aortic 3 cm.

#### *Aorta*

Aorta is elastic and there is no evidence of sclerosis.

#### *Lungs*

Each lung weighs 100 grams. There are diffuse purple areas of hemorrhage beneath the pleura on the posterior surface of each lung. The surface made by cutting is red and blood flows freely from it. The bronchi are filled with bloody mucus.

#### *Liver*

Liver weighs 300 grams. The capsule is wrinkled and red-brown. On the superior surface of the right lobe is an elevated, somewhat nodular yellow-brown area which measures approximately 10 cm. in diameter. On the inferior surface of each lobe are similar though smaller areas, particularly at the anterior margin of the left lobe. In the surface made by cutting, these areas are yellow-brown. The remaining portion of the liver is grey-red and the liver lobules are indistinct.

#### *Gallbladder*

Gallbladder is filled with thin yellow bile but there are no stones. Bile ducts are not obstructed.

#### *Spleen*

Spleen weighs 90 grams. The capsule is wrinkled and dark red. The surface made by cutting bulges, is soft and red, with increased pulp on scraping.

#### *Adrenal Glands*

Adrenal glands weigh together about 5 grams. The cortex is pale yellow and 1 mm. in thickness. The medulla is grey-brown. There is no evidence of hemorrhage or tumor.

#### *Kidneys*

Kidneys weigh together 110 grams. The capsule strips with ease from a smooth, red surface. The cortex is even and averages 0.5 cm. in width. The pyramids are dark red. Pelves and ureters appear natural.

#### *Urinary Bladder*

The lining of the urinary bladder is yellow. There is no evidence of hemorrhage or tumor.

#### *Prostate Gland*

Prostate gland is infantile.

#### *Gastro-Intestinal Tract*

Esophagus, stomach, small and large intestines, and appendix appear natural.

#### *Pancreas*

Pancreas weighs 40 grams. It is lobulated and grey-pink. There is no evidence of hemorrhage or tumor.

#### *Osseous System*

The bodies of the vertebrae are dark red. There is no evidence of fracture or abnormality of the osseous system.

#### *Lymphoid Tissue*

The mesenteric lymph nodes are firm, grey-red and measure up to 1.5 cm. in diameter. Those around the pancreas are red-brown.

#### *Thymus Gland*

Thymus gland is normal in size.

#### *Head*

Not examined.

#### *Spinal Cord*

Not examined.

#### *Anatomical Diagnosis*

Liver: Subacute red atrophy.

Lungs: Subpleural hemorrhages.

Heart: Subepicardial hemorrhage.

Spleen: Acute passive hyperemia.

Kidneys: Biliary nephrosis.

Skin: Marked icterus.

Ascending Colon and Cecum: Mobile mesentery.



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To be a good doctor—first be a good citizen. *Register* and then *Vote*. And of equal importance, see that your family does likewise.

## HEMOPTYSIS

"The expectoration of blood is always an alarming experience for the patient and a matter of grave concern to the attending physician, because it may be the warning of serious disease. There is probably no symptom other than severe and acute pain that will stimulate a patient to seek medical aid as promptly as loss of blood for the first time from an unexplained source. When such bleeding occurs from the respiratory tract, the possibility of its being due to pulmonary tuberculosis or carcinoma of the lung is promptly suggested. It is unfortunate, indeed, that the severity of the bleeding is no guide as to the presence or absence of these diseases. It is imperative, therefore, that the patient with a history of hemoptysis have the benefit of thorough investigation to determine the cause of the bleeding.

"It is essential first to determine that the bleeding does not originate from the oral



cavity or nasopharynx. One should take similar precautions to be certain that the bleeding does not come from the gastrointestinal tract. Rarely, one encounters a malingerer who, for reasons known best to himself, gives a history of hemoptysis. In this case, the differential diagnosis can be extremely difficult."

Thus does Moersch<sup>1</sup> open his discussion of this subject. The Rochester investigator based his study upon a series of 200 patients who gave a history of hemoptysis. The patients ranged in age from 16 to 74 years, the average age being 44 years. The author also tells us that "Hemoptysis occurred most frequently in the patients between 50 and 59 years of age. In the decades above and below this one, the incidence decreased progressively."

Moersch states in conclusion that "A history of hemoptysis was obtained in 200 (29.8%) of 670 cases in which bronchoscopy was performed. The two lesions that were encountered most frequently in the 200 cases were malignant tumors of the trachea, bronchus, or lung and bronchiectasis. A malignant tumor of the trachea, bronchus, or lung was present in 59 (29.5%) of the 200 cases. Whenever a patient more than 40 years of age gives a history of hemoptysis, the presence of a malignant tumor should be suspected.

"Bronchiectasis was present in 53 (26.5%) of the 200 cases in which there was a history of hemoptysis and in 97 (14.5%) of the 670 cases in which bronchoscopy was performed. In the 53 cases in which bronchiectasis was associated with hemoptysis, the average age was higher than in the cases in which bronchiectasis occurred without hemoptysis. (This apparent difference in the average age in the two groups of cases is largely attributable to the duration of the disease.)

"In 17 (7.5%) of the 200 cases, the cause of the hemoptysis could not be determined. In cases in which a thorough clinical investigation, including roentgenographic examination of the thorax, failed to disclose any cause for the hemoptysis, there is an excellent chance that a serious pulmonary lesion will not develop subsequently. In this group of 200 cases, the hemoptysis occurred most

frequently in the sixth decade of life. One hundred twenty-three of the patients were men, and 77 were women. The severity of the bleeding gave no indication of the nature of the underlying lesion."

In his brief but excellent paper Moersch has well covered a troublesome entity. And the fact that all 200 of his cases were thoroughly examined and subjected to bronchoscopy makes his presentation all the more valuable. Hemoptysis will in all probability long continue to terrify those who experience it. But it is indeed fortunate that modern methods of examination and treatment are beginning to rob it of some of its terrors.

As stated above, the Rochester observer reported that in 59 of the cases malignant tumors were found and in 63 cases bronchiectasis was encountered. Moersch's third cause of hemoptysis was chronic bronchitis, 18 cases; fourth, pulmonary tuberculosis, 11 cases; pulmonary abscess, 10; and pneumonitis, 6 cases. The few remaining cases were due to other and rarer conditions. No great surprise will be occasioned by the fact that malignant tumors and bronchiectasis headed the list. But to many physicians, the older ones in particular, it will probably seem strange to find pneumonia and tuberculosis playing a relatively minor role in the causation of hemoptysis.

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**Voluntary Health Insurance**—The past year has seen a continued increase in the number of participants in voluntary prepaid hospital and medical care plans. The Blue Cross and Blue Shield, sponsored by the medical profession, pioneered this type of insurance. Subsequently this field of insurance has been entered by commercial companies, and a competitive voluntary health insurance developed, resulting in better coverage and lower costs.

In developing this field of insurance, Blue Shield and Blue Cross served its most important function. This was an important contribution in our fight against compulsory federal health insurance. As originally designed, voluntary health insurance was for catastrophic illnesses, and it has largely developed into a surgical plan. Catastrophic illness is not limited to diseases requiring operative therapy. Blue Shield can again serve in a pioneering manner by broadening its coverage into other fields of medicine. There is sufficient statistical material available from its previous experience in health insurance to permit accurate estimates of the cost of such expansion.—*Murphey, J. Florida M. A., June '52.*

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1. Moersch, Herman J.: Clinical Significance of Hemoptysis, *J. A. M. A.* 148: 1465 (Apr. 26) 1952.

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"In 17 (7.5%) of the 200 cases, the cause of the hemoptysis could not be determined. In cases in which a thorough clinical investigation, including roentgenographic examination of the thorax, failed to disclose any cause for the hemoptysis, there is an excellent chance that a serious pulmonary lesion will not develop subsequently. In this group of 200 cases, the hemoptysis occurred most

frequently in the sixth decade of life. One hundred twenty-three of the patients were men, and 77 were women. The severity of the bleeding gave no indication of the nature of the underlying lesion."

In his brief but excellent paper Moersch has well covered a troublesome entity. And the fact that all 200 of his cases were thoroughly examined and subjected to bronchoscopy makes his presentation all the more valuable. Hemoptysis will in all probability long continue to terrify those who experience it. But it is indeed fortunate that modern methods of examination and treatment are beginning to rob it of some of its terrors.

As stated above, the Rochester observer reported that in 59 of the cases malignant tumors were found and in 63 cases bronchiectasis was encountered. Moersch's third cause of hemoptysis was chronic bronchitis, 18 cases; fourth, pulmonary tuberculosis, 11 cases; pulmonary abscess, 10; and pneumonitis, 6 cases. The few remaining cases were due to other and rarer conditions. No great surprise will be occasioned by the fact that malignant tumors and bronchiectasis headed the list. But to many physicians, the older ones in particular, it will probably seem strange to find pneumonia and tuberculosis playing a relatively minor role in the causation of hemoptysis.

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**Voluntary Health Insurance**—The past year has seen a continued increase in the number of participants in voluntary prepaid hospital and medical care plans. The Blue Cross and Blue Shield, sponsored by the medical profession, pioneered this type of insurance. Subsequently this field of insurance has been entered by commercial companies, and a competitive voluntary health insurance developed, resulting in better coverage and lower costs.

In developing this field of insurance, Blue Shield and Blue Cross served its most important function. This was an important contribution in our fight against compulsory federal health insurance. As originally designed, voluntary health insurance was for catastrophic illnesses, and it has largely developed into a surgical plan. Catastrophic illness is not limited to diseases requiring operative therapy. Blue Shield can again serve in a pioneering manner by broadening its coverage into other fields of medicine. There is sufficient statistical material available from its previous experience in health insurance to permit accurate estimates of the cost of such expansion.—*Murphey, J. Florida M. A., June '52.*

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1. Moersch, Herman J.: Clinical Significance of Hemoptysis, *J. A. M. A.* 148: 1465 (Apr. 26) 1952.

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### WHY?

W. A. Dozier, Jr.

Director of Public Relations

One part of public relations is attempting to understand people, learning why they act as they do, and trying to put this knowledge to use in our relationships with others. The purpose in this article is purely to pose some questions. No answers are expected, for this is purely academic musing. Besides, if an answer were offered by those who have and do study the field, the chances are that most of us would not understand anyway. Yet each of us needs some idea of why and how and some means of tying things down.

The recent trend of matters was pointed up in a small way by a short notice in an issue of a Montgomery paper. The article entitled "Calls Increase at Book Store for Banned Book" gave rise to some thinking. The question simply stated is "Why?" What is it in the human mind that causes people to rush out to secure a book that has been banned? "Woman of Rome" was banned by Catholic authorities because of "exclusive interest in the worst aspects of life, describing abnormal and degenerate acts." The increased calls for the book told the story.

Other examples can be given. Banned in Boston is considered a sure-fire way to boost sales of a book or to get more people out to see a play or movie. Not too long ago a certain play by a well known American playwright was forbidden a showing in Boston. It was produced in a nearby town, and business was booming.

As has been said, the interesting thing here is why? Is it the forbidden that appeals? Are we as a people trying to find something to shock us? Or are we going through a phase of thinking and living such as was found after the last world war and which was probably brought on by the great tension we had just gone through? In other words, why must a writer fill his writing with four letter words, whether they fit or not? And why does our interest

seem to lie primarily if not solely in the macabre, the degenerate, and the obscene?

With such a background, how can we as a people be expected to think that the peddling of influence, the deep freeze and mink coat episodes, or even greater things are wrong? Where will it all lead?

There are those of us who are pollyannas and still think people are basically good and are interested in doing the right thing. From that belief we go on dealing with others according to how we would have them deal with us. Are we naive? If so, must we change our viewpoint; or can we expect matters to change? It is all very interesting and indicative of something; but how are we to evaluate the situation, and how are we to approach our fellow man in our dealings with him?

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**The Best of Life**—How many of the more than 20,000,000 elderly people in this land of freedom and abundance feel that they are enjoying the best part of lifetime?

How many past the busy years of careers, jobs and home-making feel that there is still a place in the world for them?

Past the days of routine work, either because of feebleness or just laid aside because they cannot, like Joshua, command the sun to stand still when they reach the age of three score and ten, how many look to the sunset of life with happy calm, and how many live in daily dread of tomorrow?

How many find themselves—or believe they are—an added burden on the families of their sons and daughters and wish they might have homes of their own where the thought of being a burden to others would not plague them by day and cause sleepless nights when old folks should have peaceful sleep and happy dreams—if any!

Thousands of court records and family histories compiled by medical men indicate beyond doubt that the mental borderline of a large proportion of elderly people is due to their anxiety while trying to adjust their old age to family life. In millions of cases, happy adjustment of elderly folk to continued living in their children's homes is impossible because of economic and other factors, though grandmother and grandfather are loved and revered by sons and daughters and grandchildren. The elders need, and richly deserve, the comfort, peace and happiness of home life as they approach the "valley of the shadow."—Smith, J. Michigan M. Soc., May '52.



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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

### PROTECTING YOUR CHILD BY IMMUNIZATION

The medical profession and public health workers are proud of the progress made in recent years in the conquest of various diseases. While this victory has covered most forms of illness, it has been particularly notable in the field of child health. And it probably has been most spectacular in the field of child disease prevention.

The chief agent of disease prevention, as you probably do not need to be told, is protective immunization. While this form of protection is not new by any means, it is making progress. New developments are being made. More powerful immunizing agents are being produced. Old dangers are being minimized. Major killers of a generation or two ago are being tamed. Your child's general health outlook is being made much brighter. His future, as far as health is concerned, is becoming much more hopeful. The chance that he will die from one of the traditional childhood diseases is growing dimmer. Conversely, the chance that he will live out a normal span of years is becoming much brighter.

What is the current status of protective immunization in Alabama? What is its particular status with reference to childhood?

In addition to the already mentioned effort to improve the effectiveness of immunizing agents, bacteriologists and physicians are trying to find out the best times they should be administered. Studies have been carried on to determine the most effective intervals at which youngsters should receive their "shots." Other studies are aimed at finding out when—at what age—immunization should begin. Still other studies have still other objectives.

Three of the major diseases of childhood are now being fought with a single preventive weapon. Known as triple antigen, it provides immunization against pertussis, diphtheria and tetanus. Like a number of

other disease-preventing products, this is furnished without charge to county health departments by the State Department of Health. It is also supplied free to private physicians wishing to administer it to their patients.

There are also products for providing immunization against these three diseases individually. They are also furnished without charge to county health departments and to private physicians. Suppose we consider them first. Then we shall give consideration to the triple antigen.

Pertussis is the latest of these diseases to be curbed by routine immunization. Also, as Dr. William Allen Howard recently pointed out, pertussis vaccine "has the doubtful distinction of being the least effective." This medical authority, who is associate in pediatrics at the George Washington University School of Medicine, tells us that modification of the method of producing pertussis vaccine "has improved its efficacy and lessened its unpleasant side-effects, but pertussis immunization remains a major problem."

As you may know, whooping cough is primarily a disease of very young children. Those who escape it during the first half-year of life are not entirely safe from it, unfortunately. But they are relatively safe. For, as Dr. Howard reminds us, "the bulk of pertussis mortality occurs prior to the age of seven months." Pertussis vaccine, therefore, needs to be given considerably earlier than most immunizing agents. Dr. Howard's experience has duplicated the experience of public health agencies in this and other states. It has also been similar to that of private physicians. The results have been satisfactory, although, as already pointed out, pertussis vaccine generally has not proved as effective as other forms of immunization. That authority summarized his conclusions as follows:

"... in the group inoculated under the age of three months one may estimate that ... only 25 per cent of the exposed infants will develop pertussis, whereas among non-immunized groups ... the attack rate after household exposure is from 75 to 90 per cent. This indicates significant protection ... Therefore, regardless of how early

the vaccine is administered, some beneficial effects are to be expected at a time when they are most needed. The age at which the vaccine is first given must be decided on the basis of local necessity or desirability."

Booster injections of pertussis vaccine should always be given as soon as possible after a child has been exposed to the disease, regardless of the regularity of previous doses. And booster doses also should be administered, in the absence of exposure, at intervals varying from two to three years.

Some children react adversely to pertussis vaccine. Fortunately, refinements in manufacture have done much to reduce both the likelihood and the severity of these reactions. Parents may consider themselves safe in following their doctors' or public health workers' guidance regarding the use of pertussis vaccine.

Diphtheria toxoid, which is manufactured by the State Health Department's Bureau of Laboratories, is usually administered initially about the age of six months. However, it has been found to be effective at the age of four or even three months. In fact, in some communities three-month immunization has become routine procedure.

In some diseases we have to assume that an immunizing agent has been effective and wait until exposure to find out whether it actually was. But that is not true of diphtheria. Within reasonable limitations, the Schick test will show whether diphtheria toxoid has "taken." If this test indicates that it has not, then another dose should be administered.

In general, the diphtheria immunization routine is about like this: An initial dose of two injections is given at intervals of two to three weeks. Then "booster shots" should be given about every two to four years.

It is rather surprising, in view of the success of tetanus immunization procedures, that the medical profession and the public health agencies were somewhat slow in using it on small children. This probably was due in large part to the belief that tetanus was not an important disease among youngsters. Parents and doctors alike probably reasoned that only adults or older children were likely to be wandering about barnyards, in pastures and in other places where they would be in danger of stepping upon a nail or some other sharp object bearing the deadly tetanus germs. That is quite true of

course. But you don't have to get tetanus that way. Young children playing on the back porch can jab themselves with ice picks. They can injure themselves with other kinds of sharp-pointed objects. They can play in tetanus-infected dirt after cutting themselves and thus opening direct pathways for the germs. So tetanus is by no means a minor disease danger in young children.

Here is something else to remember about this disease and youngsters: The average adult, even without any particular tetanus-consciousness, realizes the tetanus danger. The chances are that he knows something about how the disease is contracted. So, when he steps upon a rusty nail in a plowed field or hurts himself with a piece of farm machinery that has been lying around the yard, he will probably become concerned. Doing so, he will see his doctor. That is almost certain to lead to his receiving tetanus antitoxin. But a young child is different. He is too young to know or care anything about tetanus. If he is cut badly enough to hurt much, he will probably begin crying. But an injury can be dangerous from the tetanus point of view without causing a great deal of pain. And, even if he does start crying, he may not be able to talk well enough to make his parents understand exactly what has happened. So, among youngsters especially, it is important to keep the level of immunization high. This can be accomplished only by giving them the original "shots" and following them up with "booster shots" at proper intervals. Parents should be guided by their family doctors or public health workers as to how often these "booster shots" should be administered. However, the usual interval is about three years.

As pointed out earlier in this paper, it is possible to obtain immunization against all three of these diseases—diphtheria, tetanus and pertussis, or whooping cough—in a single "shot." And as also has been pointed out, this three-disease product may be obtained without charge from the State Health Department's Bureau of Laboratories. Naturally, it is not furnished to individual patients or their parents. But it is readily available to doctors and public health agencies. If this triple antigen is administered by your family physician, you naturally may expect to pay a reasonable amount for its administration. There is no charge of



any kind—for either the product itself or its administration—when obtained from your county health department.

Triple antigen may be given as early as three months, with results practically the same as are obtained when it is given at the age of six months. Whenever, for any reason, it is necessary or desirable to provide immunization to whooping cough earlier than three months—say at the age of four to eight weeks—the triple antigen can be used quite effectively at that earlier age. It is then administered at intervals of about four weeks. Another dose, given at the age of 20 to 24 weeks, provides adequate protection against diphtheria, which might be lacking without that third dose.

“Such a program,” Dr. Howard reminds us, “has the advantage of early protection against pertussis. Also,” he goes on, “the triple antigen combination has helped to solve the problem of booster doses, since a single injection of the combined vaccine serves as an adequate booster for all three components (diseases).”

You may have heard that immunization of children tends to increase their susceptibility to poliomyelitis. What about that?

Studies carried on in this country, England and Australia indicate that a child who has recently been immunized probably is more likely to develop paralyzing poliomyelitis under certain circumstances than if he had not been immunized. However, these studies have not been conclusive. The increased susceptibility is not very great.

Apparently, a child who develops poliomyelitis is slightly more likely to develop paralysis in the limb used for inoculating if he has been immunized against any of several illnesses within the previous four weeks. After that four-week period has passed, this increased susceptibility to paralysis does not seem to exist. Moreover, whatever increased susceptibility there may be appears to exist only during a period of greatly increased poliomyelitis prevalence generally, as during an epidemic.

To be on the safe side, doctors and public health workers usually advise parents not to give their children immunization “shots” during a poliomyelitis outbreak unless there are particular reasons for doing so. Other things being equal, it is advisable to give such “shots” in the fall, winter, and spring rather than in the summer. However, many

immunizations are given in the summer-time, and even during epidemics, without adverse effects. This is a matter which can be safely left up to your doctor or public health official.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

April 1952

|   |        |
|---|--------|
| Examinations for diphtheria bacilli and Vincent's .....         | 185    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 1,100  |
| Brucella cultures .....   | 7      |
| Typhoid cultures ( blood, feces, and urine) .....               | 778    |
| Examinations for malaria.....                                   | 218    |
| Examinations for intestinal parasites .....                     | 4,190  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 41,510 |
| Darkfield examinations .....                                    | 4      |
| Examinations for gonococci .....                                | 1,722  |
| Examinations for tubercle bacilli .....                         | 3,087  |
| Examinations for meningococci .....                             | 1      |
| Examinations for Negri bodies (microscopic) .....               | 101    |
| Water examinations .....  | 1,526  |
| Milk and dairy products examinations .....                      | 4,444  |
| Miscellaneous .....   | 864    |

Total 59,737

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1952

|                               | Feb. | March | E. E.*<br>March |
|-------------------------------|------|-------|-----------------|
| Typhoid and paratyphoid ..... | 3    | 2     | 4               |
| Undulant fever .....          | 0    | 3     | 5               |
| Meningitis .....              | 17   | 17    | 17              |
| Scarlet fever .....           | 36   | 37    | 64              |
| Whooping cough .....          | 182  | 81    | 102             |
| Diphtheria .....              | 8    | 5     | 21              |
| Tetanus .....                 | 2    | 4     | 2               |
| Tuberculosis .....            | 191  | 215   | 255             |
| Tularemia .....               | 1    | 2     | 2               |
| Amebic dysentery .....        | 1    | 1     | 1               |
| Malaria .....                 | 0    | 0     | 27              |
| Influenza .....               | 3025 | 8772  | 939             |
| Smallpox .....                | 0    | 0     | 0               |
| Measles .....                 | 2213 | 4906  | 485             |
| Poliomyelitis .....           | 4    | 7     | 2               |
| Encephalitis .....            | 0    | 1     | 0               |
| Chickenpox .....              | 328  | 475   | 254             |
| Typhus fever .....            | 0    | 1     | 11              |
| Mumps .....                   | 400  | 721   | 222             |
| Cancer .....                  | 305  | 436   | 252             |
| Pellagra .....                | 3    | 3     | 2               |
| Pneumonia .....               | 364  | 635   | 428             |
| Syphilis .....                | 221  | 271   | 1024            |
| Chancroid .....               | 5    | 4     | 13              |
| Gonorrhea .....               | 250  | 303   | 574             |
| Rabies—Human cases .....      | 0    | 0     | 0               |
| Positive animal heads .....   | 37   | 33    | 0               |

|                         | March | April | E. E.*<br>April |
|-------------------------|-------|-------|-----------------|
| Typhoid and paratyphoid | 2     | 3     | 5               |
| Undulant fever          | 3     | 4     | 2               |
| Meningitis              | 17    | 6     | 14              |
| Scarlet fever           | 37    | 18    | 59              |
| Whooping cough          | 81    | 97    | 126             |
| Diphtheria              | 5     | 15    | 19              |
| Tetanus                 | 4     | 1     | 3               |
| Tuberculosis            | 215   | 219   | 241             |
| Tularemia               | 2     | 3     | 1               |
| Amebic dysentery        | 1     | 2     | 5               |
| Malaria                 | 0     | 1     | 28              |
| Influenza               | 8772  | 2280  | 743             |
| Smallpox                | 0     | 0     | 0               |
| Measles                 | 4906  | 2717  | 831             |
| Poliomyelitis           | 7     | 1     | 3               |
| Encephalitis            | 1     | 3     | 1               |
| Chickenpox              | 475   | 294   | 186             |
| Typhus fever            | 1     | 3     | 12              |
| Mumps                   | 721   | 417   | 226             |
| Cancer                  | 436   | 326   | 217             |
| Pellagra                | 3     | 3     | 2               |
| Pneumonia               | 635   | 304   | 380             |
| Syphilis                | 271   | 175   | 1090            |
| Chancroid               | 4     | 6     | 18              |
| Gonorrhea               | 303   | 265   | 496             |
| Rabies—Human cases      | 0     | 0     | 0               |
| Positive animal heads   | 33    | 33    | 0               |

As reported by physicians and including deaths not reported as cases.

\*F. F.—The estimated expectancy represents the median incidence of the past nine years.

## BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

### TASTES AND ODORS IN WATER SUPPLIES

Contributed by

C. W. White, M. S. in S. E.

Prin. San. and Pub. Health Eng.

Tastes and odors usually occur together and are probably the most common causes of complaints on the part of water consumers. Although they are of comparatively little importance from a health standpoint, a satisfactory drinking water should be practically tasteless and odorless.

When a surface stream or lake is used as the source of supply, the common tastes and odors are due to (a) organic matter from algae and other micro-organisms, either living or in process of decay; (b) decomposed organic matter in general, sewage or plant growths; and (c) industrial wastes, of which phenol is usually the most troublesome. Since these waters are treated by coagulation, sedimentation and filtration, the causes for the tastes and odors are usually removed by one or a combination of the following treatments: (1) addition of activated carbon before filtration; (2) addition of chlorine, chlorine dioxide or other oxidizing agents. Fullers' earth added before filtration has been successful in removing tastes caused by waste from petroleum refining plants.

The local county health department's personnel is primarily concerned with tastes

and odors in waters obtained from wells. In these supplies the complaints are usually due to (a) dissolved gases, such as hydrogen sulfide; (b) iron and other minerals, either in the source of supply or caused by corrosion in the distribution system; or (c) chlorine when it is used. Chlorine taste is not pronounced when it is free or, in other words, when it is not in combination with minerals or decomposing organic matter. If the water has a chlorinous taste, it can usually be eliminated by adding additional chlorine but not by reducing the chlorine dosage. After the taste is eliminated there may be a slight chlorine odor.

When hydrogen sulfide odor is detected, it can be removed by aeration and the addition of chlorine. For complete removal it is necessary to add sufficient chlorine to produce a free chlorine residual. The presence of free chlorine may be determined by adding 8 to 10 drops of orthotolodine to a 100 ml. sample of the water and noting the color produced. If the color (characteristic yellow-green) develops within a few seconds and does not increase while standing, free chlorine is present. If no color is observed within a few seconds but does occur while standing, then the chlorine is in combination with other elements. Should this occur, add additional amounts of chlorine until the color is developed within a few seconds.

The most common complaint is due to iron in the water. The water may be clear when it is first drawn from a tap but will change to yellow or red upon standing while exposed to the air. This color is more than likely due to iron in the water. The iron is in solution when it is drawn but will be oxidized by the oxygen in the air so that it will precipitate or at least produce the color.

The iron may be in the well water as it is drawn from the well or may be dissolved from the pipes in the distribution system. A simple test for determining the source of the iron in the water drawn from the tap can be made by drawing a sample of the water directly from the well or from a tap at the well discharge and a second sample from a tap away from the well on the distribution system. If after standing twelve hours or longer both samples show the iron color then iron is present in the well water. If, however, the iron color appears only in the sample collected from the distribution system, the well water is free of iron but the well water is corrosive.



The chemical that causes the water to be corrosive is carbon dioxide. This chemical is not harmful to humans and it is consumed daily by many people in carbonated drinks. In solution with water a weak acid is produced which will dissolve iron or copper from steel or copper tubing or pipes. Some of the carbon dioxide can be removed by aeration and the remainder can be neutralized with lime or soda ash. If this treatment is used the water must be pumped twice. Usually the owners of private or semi-public supplies prefer to pump the water from the well directly to the distribution system. In this case the carbon dioxide may be neutralized by pumping soda ash into the water as it is pumped from the well. There is another treatment that has been fairly successful in preventing corrosion in the distribution system. The addition of a chemical known as Micromet has been used by many small supplies and the owners of most of these supplies have reported success in preventing red water troubles. Information on the solution pot used for adding Micromet may be secured from most large wholesale hardware stores. If not, the engineers in the Bureau of Sanitation will gladly furnish this information.

When iron is present in the water as it comes from the well, no simple or inexpensive treatment process has been entirely satisfactory for small supplies. There are some manufacturers of small filters which claim that their product will remove iron. If one of these is purchased it is suggested that it be bought from a reliable firm and a guarantee be gotten along with the approximate cost of operation. On larger plants the iron can be removed by aeration followed by the addition of an alkali (lime or soda ash) and then filtered. There are some units that use forced draft aeration without the addition of an alkali that have also given good results. The cost of these units, however, is relatively high and may be too expensive for private or semi-public supplies.

The engineers assigned to the Water Division, Bureau of Sanitation, State Health Department, are always ready to render all possible assistance with taste and odor problems in Alabama water supplies.

"Deaths from tuberculosis have been reduced to about one-tenth of what they were a century ago; but they still cost the U. S. A. 1,000,000 years of future working-life and \$350,000,000 a year for medical care and related services."

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR FEBRUARY 1952, AND COMPARATIVE RATES

| Live Births,<br>Stillbirths and<br>Deaths by Cause                          | Number<br>Registered<br>During<br>February 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|---|---|-------|---------|--------------------------|-------|-------|
|   | Total   | White | Colored | 1952                     | 1951  | 1950  |
| Total live births   | 6606  |       |         | 26.6                     | 26.7  | 26.5  |
| Total stillbirths   | 168   | **    | **      | 24.8                     | 25.2  | 22.1  |
| Deaths, stillbirths<br>excluded   | 2188  | 1238  | 950     | 8.8                      | 9.6   | 8.8   |
| Infant deaths:  |   |       |         |                          |       |       |
| under one year  | 255   | 95    | 160     | 38.6                     | 42.6  | 30.6  |
| under one month   | 156   | 62    | 94      | 23.6                     | 24.6  | 20.5  |
| Causes of Death   |   |       |         |                          |       |       |
| Tuberculosis, 001-019   | 51  | 27    | 24      | 20.5                     | 27.7  | 25.5  |
| Syphilis, 020-029   | 10  | 1     | 9       | 4.0                      | 5.0   | 4.2   |
| Dysentery, 045-048  | 1   | 1     | 1       | 0.4                      | 1.3   | 0.4   |
| Diphtheria, 055   | 1   | 1     |         | 0.4                      | 1.3   | 0.8   |
| Whooping cough, 056   | 2   |       | 2       | 0.8                      | 0.4   | 1.3   |
| Meningococcal infections, 057   | 6   | 5     | 1       | 2.4                      | 0.4   | 0.4   |
| Poliomyelitis, 080, 081   | 2   | 1     | 1       | 0.8                      |       | 0.4   |
| Encephalitis, 082, 083  | 1   | 1     |         | 0.4                      |       |       |
| Measles, 085  | 3   | 1     | 2       | 1.2                      |       |       |
| Malignant neoplasms,<br>140-205   | 216   | 144   | 72      | 86.9                     | 78.6  | 84.9  |
| Diabetes mellitus, 260  | 37  | 27    | 10      | 14.9                     | 14.3  | 8.5   |
| Pellagra, 281   | 3   | 2     | 1       | 1.2                      | 0.4   | 2.1   |
| Vascular lesions of<br>central nervous system,<br>330-334                   | 242   | 127   | 115     | 97.4                     | 109.6 | 107.5 |
| Other diseases of nervous<br>system, 300-318,<br>340-398                    | 28  | 14    | 14      | 11.3                     | 18.1  | 12.7  |
| Rheumatic fever,<br>400-402   | 5   | 3     | 2       | 2.0                      | 1.7   | 2.1   |
| Diseases of the heart,<br>410-443   | 663   | 426   | 237     | 266.7                    | 296.2 | 258.7 |
| Diseases of the arteries,<br>450-456  | 44  | 30    | 14      | 17.7                     | 12.6  | 18.7  |
| Other diseases of the<br>circulatory system,<br>444-447, 460-468            | 23  | 12    | 11      | 9.2                      | 8.8   | 12.7  |
| Influenza, 480-483  | 48  | 17    | 31      | 19.3                     | 17.6  | 14.0  |
| Pneumonia, 490-493  | 89  | 40    | 49      | 35.8                     | 62.2  | 46.3  |
| Bronchitis, 500-502   | 3   | 2     | 1       | 1.2                      | 2.9   | 3.4   |
| Appendicitis, 550-553   | 2   |       | 2       | 0.8                      | 0.8   | 3.4   |
| Intestinal obstruction<br>and hernia, 560, 561,<br>570                      | 15  | 5     | 10      | 6.0                      | 3.8   | 5.5   |
| Gastro-enteritis and<br>colitis (under 2),<br>571.0, 764                    | 14  | 5     | 9       | 5.6                      | 2.5   | 2.1   |
| Cirrhosis of liver, 581   | 16  | 12    | 4       | 6.4                      | 5.9   | 7.2   |
| Diseases of pregnancy<br>and childbirth,<br>640-689                         | 10  | 4     | 6       | 14.8                     | 12.3  | 17.2  |
| Sepsis of pregnancy<br>and childbirth, 640,<br>645.1, 651, 681, 682,<br>684 |   |       |         |                          | 1.5   | 1.6   |
| Congenital malforma-<br>tions, 750-759                                      | 20  | 13    | 7       | 3.0                      | 3.0   | 3.5   |
| Accidental deaths,<br>total, 800-962  | 156   | 108   | 48      | 62.8                     | 67.2  | 43.3  |
| Motor vehicle acci-<br>dents, 810-835, 960                                  | 63  | 43    | 20      | 25.3                     | 21.0  | 21.7  |
| All other defined<br>causes   | 369   | 181   | 188     | 148.5                    | 153.8 | 160.5 |
| Ill-defined and un-<br>known causes, 780-<br>793, 795                       | 108   | 29    | 79      | 43.4                     | 53.8  | 43.7  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the February report of the years specified.

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AMERICAN MEDICAL ASSOCIATION NEWS

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**HOME CARE FOR POLIO PATIENT BEST IN SOME INSTANCES**

Home care in selected cases of poliomyelitis, rather than hospitalization, was suggested by Dr. Philip M. Stimson, of the department of pediatrics, New York Hospital-Cornell Medical Center, New York.

Writing in the *Journal of the American Medical Association*, Dr. Stimson said most patients with suspected polio, nonparalytic forms of polio, and many of the mild forms of the disease "might better be cared for at home." This is particularly true, he added, if local health authorities can aid the family physician to differentiate poliomyelitis from other conditions and can provide the family physician with visiting nursing and physical therapy to care for the patients in the home.

"First and foremost among the advantages of home care is the important fact that the patient is saved the fatigue, excitement and nervous tension of the trip to the hospital, and the excessive handling that is usually incident to the first days in a hospital," Dr. Stimson pointed out. "There is wide agreement today that fatigue and exhaustion at the onset of poliomyelitis seem to aggravate the ravages of the oncoming disease."

Among other reasons given by the physician for home care, if possible, were: (1) many parents prefer to keep their child home; (2) there is far less emotional disturbance; (3) the financial costs are less; (4) the family physician can remain in touch with his patient, and (5) home care releases many hospital beds and nurses for the care of more serious cases.

Dr. Stimson stressed that keeping the polio patient at home will not endanger the remainder of the family, as exposure and infection usually have occurred by the time diagnosis is suspected and hospitalization considered, and dangers from further exposure are presumably negligible. However, he suggested that children in the family should remain away from school for two weeks, and that all members of the household should keep out of crowded places and homes of other persons for the same period of time.

Home care for the polio patient is not complicated, Dr. Stimson said. Isolation in his own bed in his own room is indicated. The patient's bed should have a firm mattress; a footboard for keeping the weight of the bed clothes off the patient's legs is useful. He should be permitted to lie in any position in which he is comfortable and can relax, he should have a quiet environment, and he should never be awakened from sleep. Moist heat and aspirin may be given to relieve backaches and general tenderness.

The patient should be watched constantly and carefully for the possible development of any of the features that indicate transfer to a hospital, the doctor added, and an attitude of hopeful confidence and reassurance by all concerned should be encouraged.

"When the patient is afebrile, complete muscle testing should be done," Dr. Stimson stated. "If no weakness can be found and the tightness is essentially gone, the patient can be allowed gradually progressive activity, progressing first to a bedside chair, then to bathroom privileges, then after three weeks to quiet activity at home, with frequent rest periods. All fatigue or exhaustion should be avoided until at least five weeks from the onset."

In cases which require hospitalization, transportation should be done without hurry and bustle, and with a minimum of fatigue to the patient, who should be lying comfortably relaxed on a stretcher, he added.

Some of the definite indications for hospitalization are: an increasing elevation of temperature; the fact that the patient "looks sick" and is getting sicker; urinary difficulties; some weakness in a large triangular muscle covering the peak of the shoulder, which may be followed by breathing difficulty; such signs of possible bulbar polio as nasal regurgitation and voice change, if they are persistent, and particularly any difficulty in swallowing.

In addition, Dr. Stimson said, if the home has inadequate facilities for care of the patient, if there is no one to give him proper treatment, or if there is emotional instability in the family "the patient is much better off in a hospital."



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## THE POSTMENOPAUSAL PATIENT

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While the spontaneous menopause begins when a patient terminates her last menstrual period, the identification of this time spot may be difficult or even impossible. For practical purposes the history of amenorrhea for six months at or near the menopausal age, with the development of typical symptoms and local atrophic changes, will indicate the postmenopausal era. The hazards and the symptoms which accompany this era are quite different from those of earlier years. Instead of the complications of pregnancy, the risks of pelvic infection, and the development of benign tumors, this age is attended by increased constitutional and local changes that follow deprivation of ovarian secretion and by a definite upswing in the incidence of malignant neoplasia. The physician's care during this age, be he gynecologist or general practitioner, consists of three general functions: the relief of unpleasant symptoms, the treatment of local benign developments, and the early detection of malignancy.

*Unpleasant Symptoms.* These symptoms may be divided into four general groups—those involving the nervous system, those of a psychologic nature, those resulting from metabolic alterations, and those due to general postmenopausal body changes. The characteristic neurovascular symptom is that of heat flashes and sweats which occur in approximately 95 per cent of patients. Other less generally recognized nervous complaints consist of cardiac palpitation, headaches, functional gastro-intestinal disturbances, vertigo, tinnitus, paresthesias, and insomnia; any one or all of which may

occur in the same patient. The psychologic alterations occur in approximately 80 per cent of the individuals and present a variety of manifestations, such as anxiety states, excitability, weeping spells, cancerophobia, and fears of inadequacy—social, physical, or sexual. Also, there is a frequent tendency to exaggerate the magnitude of problems that would have presented little or no difficulty during the earlier years of life. Of the metabolic changes the most disturbing is the tendency to weight gain which at times seems to be uncontrollable and within itself produces a marked depression and sense of futility. Other body alterations consist of occasional generalized pruritis, the development of allergies and the dreaded wrinkles, along with the exacerbation of joint changes if the patient had a prior tendency to arthritic difficulties. The first essential in the relief of these symptoms is establishment of proof that they are truly menopausal in origin.

Since the age of the menopause varies so widely, the task of its definite identification may be most difficult. Because 95 per cent of the patients who go through the menopause experience heat flashes and sweats, the absence of these complaints should warn against its existence. Indeed the diagnosis of the menopause should be made only by the exclusion of other conditions and the exhibition of true menopausal symptoms and physical changes. It should not be used as a means of explaining symptoms that might well be, and frequently are, due to psychosomatic difficulties unrelated to failing female endocrine function. A present day weakness in clinical practice is a tendency to ascribe too much to the menopause and to rush into hormone therapy prior to



the establishment of an accurate diagnosis. This applies to both the management of constitutional symptoms and that of menstrual abnormalities which frequently accompany the menopausal age, and most particularly to the development of genital bleeding that may follow the cessation of menstruation by a period of months. While the use of hormone therapy may be indicated it should be instituted only after the possibility of general medical and psychosomatic difficulties has been disproved and also only after serious pelvic pathology has been eliminated. Even then, hormone therapy is not "a must," for many patients will accept a careful and sympathetic explanation of the psychologic changes and the nervous phenomena that attend the menopause, along with the true statement that hormone therapy is only a means of combating nature's efforts to effect an endocrinal readjustment that must come sooner or later. To administer this therapy is to supply a device for cushioning the reaction, and abundant evidence indicates that such measures prolong the period of readjustment. Furthermore, it is likely to give rise to untoward symptoms, the most important of which is irregular bleeding, that at once raises doubt as to its etiology. Many times this doubt cannot be resolved without subjecting the patient to a diagnostic curettage.

The widespread use of estrogens and their ability to produce bleeding account for a great increase in the incidence of such postmenopausal difficulties. What should be done with the patient who develops postmenopausal bleeding while she is taking estrogens? The vast number of such problems precludes immediate diagnostic curettage for each instance. The first step should be a very careful examination, preferably while the patient is bleeding. If the blood is seen to be coming down the cervical canal, if the lower genital tract is clear, and if the internal organs are normal to palpation, the next step should be immediate withdrawal of all estrogenic therapy. This will result in withdrawal bleeding frequently, which may persist for two or three weeks. Continuation of the bleeding longer than three weeks, or the recurrence of bleeding following subsequent months, in the absence of estrogenic therapy indicates an immediate diagnostic curettage. It is advisable to urge monthly interviews and examinations for at least six months, otherwise some patients

will fail to report what they consider to be unimportant staining.

Certain conditions contraindicate hormone therapy, such as the presence of breast adenosis, small myomata or endometriosis, previously treated malignancy, or a strong family history of malignancy. If estrogen therapy is deemed necessary, the oral administration of the natural estrogens is the most practical and satisfactory method. This is preferable to hypodermic administration since it produces a constant level of the hormone in contrast to the peaks that follow hypodermic injections. It is well to insist on an occasional period of abstinence, such as three weeks of medication and one week of "vacation." Patients should be urged to restrict the dose to the minimum requirements for relief of symptoms and gradually to get away from it altogether. Unless this advice is observed there is danger of estrogen habituation just as that from alcohol or tobacco, which may persist for many years after normal readjustment should have occurred.

The psychologic changes that accompany the menopause are best met by sympathetic understanding, adequate explanation, and frequent reassurance. Many patients are relieved by the loss of the nuisance of menstruation and the assurance of infertility—but, on the other hand, much resentment arises, chiefly against the obvious fact of growing old with loss of menstruation, the tendency to obesity, unpleasant menopausal symptoms, and the sense of inadequacy. Added to this—due to modern propaganda—is the fear of cancer which seems to exist to greater or less degree in the minds of all postmenopausal women. Immediate reassurance is in order as to all the fears except the latter—that of cancer which should not be dispelled until the physician, by a detailed history and a thorough physical examination, including complete gynecologic examination with visualization of the cervix and digital exploration of the rectum, has assured himself that no cancer exists. Then and only then is he free to reassure his patient. If weight is the problem, dietary and exercise regimens with salt and fluid reduction are far better than the use of estrogenic pills, anorexic tablets, or hypodermic injections.

The local postmenopausal genital changes include alterations of both the breasts and the pelvic structures. Since 45 per cent of

the breast cancers occur after the menopause, a gynecologic examination at this age is not complete without consideration of the breasts. As to the pelvic alterations there are many evidences of endocrinic deprivation. Among these are the atrophic changes in the vulvar skin and in the vaginal wall, with reversal of the vaginal reaction from acid to alkaline. Local contractures or, conversely, great increase in the previously existing relaxations of the pelvic floor are common developments. The vulvar atrophy may produce mild pruritis, but intense, persistent pruritis vulvae is more likely to result from leucorrheal discharge, glycosuria with mycotic infection, leucoplakic changes, local sensitivity to wearing apparel, highly scented soaps or bath salts. These symptoms require careful examination, with particular attention to the possibility of leucoplakic changes of the vulvar skin. Moderate thinning and glazing of the vulvar skin is normal, but a localized or widespread area of thickening that is unusually white is an indication for excision and microscopic examination. Such changes are recognized as precursors of vulvar cancer, particularly if ulceration or evidence of kraurosis is present. When, by exclusion, the diagnosis of unexplained pruritis vulvae is made, it usually will respond to warm sitz baths and the local application of bland ointments. X-ray therapy has been advocated but our experience indicates that it is useless and may even be harmful in the treatment of vulvar pruritis. Estrogenic cream has been advised, and it may be safe if the existence of leucoplakia has been eliminated, but the presence of such changes definitely contraindicates these creams, and surgical excision is in order. Postmenopausal vaginal changes predispose to infection, with the development of so-called atrophic vaginitis, which gives rise to a purulent discharge that often is irritating locally and depressing psychologically. The diagnosis of atrophic vaginitis is made by exclusion of other conditions that might produce leucorrhea, such as trichomonal or monilial vaginitis or more serious pathologic changes in the cervix or endometrial cavity. If the leucorrhea is blood stained, the question of malignancy arises at once. When the vagina presents the typical appearance of atrophic vaginitis, namely, moderate pallor with numerous petechial areas which ooze on trauma with cotton, the practical procedure is to treat this condition actively and if the staining does not

clear up after ten days or two weeks, diagnostic curettage is indicated. The treatment of atrophic vaginitis consists of the use of acid douches (lactic acid or vinegar) and the periodic vaginal installation of estrogenic vaginal suppositories or an estrogenic vaginal cream. By applying the cream or suppositories locally, effective therapy is instituted without the risk of the untoward results that follow oral or parenteral estrogen administration.

Local contractures are likely to give rise to distressing discomfort and dyspareunia in patients who were married late in life. Similar situations may arise in patients who have been subjected to extensive plastic repairs shortly before or shortly after the menopause. These symptoms may be relieved by the frequent use of sitz baths, warm douches, and by the local installation of estrogenic cream. Occasionally it is necessary to resort to incision, but this should be avoided if possible, for the resultant scar is likely to exaggerate rather than to relieve the symptoms. If operation is necessary, it is well to prepare the patient for surgery by the preoperative use of estrogenic cream locally in order to facilitate rapid healing. It is also well to advise local estrogens and the resumption of marital relations just as soon as the operative area has healed.

Patients who have moderate child birth relaxations, particularly those with heavy physical duties, often experience a great increase in the relaxation due to the atrophic changes that follow the menopause, with the development of symptoms that require attention. While astringent douches and local tamponade may bring temporary relief, mechanical support usually is required by means of intravaginal pessaries or surgical correction. The use of pessaries is advised when the constitutional condition of the patient prohibits operative intervention or when the domestic situation delays prompt surgical correction. With modern surgical methods, the safety of vaginal repair has reached the point at which it is rarely necessary to condemn a patient to a permanently unhappy pessary life. Here, it is well to point out that the approach to pelvic relaxation, with or without descensus of the uterus, is by way of the vagina and not by way of the abdomen. When a vaginal plastic is done during the postmenopausal age, care should be exercised not to do too



much, for the lack of resiliency plus the inevitable scar tissue may result in great unhappiness even though perfect anatomic restoration has been effected.

*Detection of Malignancy.* The third and most important function in the care of the postmenopause is the early detection of pelvic malignancy. In general, the menopause reduces the variety of genital hazards but the risk of carcinoma is greatly enhanced. A review of the data accumulated by the Committee for the Study of Pelvic Cancer of Philadelphia, that is so ably chaired by Dr. John Y. Howson, shows that of 2220 patients with this condition 60 per cent were postmenopausal. This era of life offers abundant opportunity in the field of early cancer detection. The average length of life of the American woman today is 71 years, and the mean age of the menopause is 48 years. During the twenty three postmenopausal years 60 per cent of the malignancies occur in contrast to 40 per cent during the preceding 48 years. In other words the postmenopausal woman has more than twice the chance to develop genital malignancy than does her younger relative. While current prophylactic measures may reduce the incidence of postmenopausal cancer in the future, the greatest challenge at present continues to be that of prompt diagnosis.

This challenge may be met by frequent interviews and pelvic examinations, with visualization of the cervix and digital exploration of the rectum. The first step is a complete history, with emphasis upon the genital structures including the breasts. In general, gynecologic symptoms at this age fall into four categories: discomfort or pain in some portion of the genital tract; dysfunction of other pelvic viscera, such as the bladder, the anus, or the rectum; the appearance of an area of ulceration or the development of an enlargement or a tumor; and, most important, the occurrence of an abnormal discharge from the genital tract, either blood stained leucorrhea or actual hemorrhage. At this point it is well to emphasize that no contraindication exists to examination of the patient with postmenopausal bleeding while she is bleeding. Indeed, such a step has a particular advantage in that it frequently enables the examiner to determine the exact source of the blood.

In consideration of genital discomfort or pain, the breasts usually are painless following the menopause. While early mammary

cancer rarely gives rise to local pain, the development of vague discomfort in a breast or the patient's suspicion of a lump or a change in contour should be investigated with greatest care. As to the pelvic structures, they should be relatively free of discomfort at this age. Mild pruritis is not unusual but years of persistence or increased severity of this symptom most likely indicate the development of leucoplakic changes, the early detection and excision of which are vital in the prevention of carcinoma. The appearance of an area of ulceration on such a base indicates immediate biopsy. The use of estrogenic ointments in the effort to heal such an ulcer is absolutely contraindicated, unless a negative biopsy has been obtained.

The development of lower abdominal discomfort or pelvic pain following the menopause is a definite indication for pelvic examination and digital rectal exploration. This discomfort might well be the result of malignant transformation of a previously existing pelvic tumor or the development of ovarian carcinoma. Urinary symptoms—frequency, urgency, dysuria, or pain after voiding—indicate complete pelvic examination with catheterization of the patient and urinary analysis. Gross or microscopic hematuria demands urographic and cystoscopic study. Pain or discomfort in the anorectal area, especially if it is associated with a change in bowel habits or staining at stool, requires investigation of the genital tract and careful study of the lower bowel by digital rectal exploration, proctoscopic, and barium enema examination. Occasionally the patient is unable to identify the source of the bleeding and depends upon the doctor to tell her whether it is arising from the genital tract, the urinary tract, or the lower bowel. If this identification is not possible upon examination, the use of a vaginal tampon, catheterization of the patient, and digital rectal examination usually will disclose the source of the blood. Should these measures fail, subsequent investigation should consist of diagnostic curettage, cystoscopic and proctoscopic examination, urogram, and a barium enema—with special polyp study of the colon.

The recent appearance of an ulceration, a tumor, or an enlargement in the pelvic area or in the external genitalia demands investigation. Persistent and increasing enlargement of the lower abdomen after the meno-



pause is a common complaint but it should not be taken lightly. While this enlargement may be due to simple abdominal fat, the possibility of pelvic tumor or ascites must be excluded. It is well to recall an old axiom that "a pelvic tumor that makes its appearance following the menopause is likely to be ovarian in origin and it is usually malignant in nature." Therefore, such enlargement should indicate very careful abdominal and pelvic examination, with particular attention to the area of Douglas' cul-de-sac. The presence of tiny or large nodules that are adherent in the cul-de-sac, associated with fluid in the abdomen, is almost pathognomonic at this age of ovarian carcinomatosis.

After the menopause any type of vaginal discharge is clinically significant and it is incumbent upon the medical advisor to disprove the presence of malignancy before he reassures or treats the patient. Such discharge consists of one of three types: leucorrhea, blood stained leucorrhea, or active bleeding. The development of any one of these symptoms requires careful pelvic examination, with visualization of both the cervix and the vaginal walls. If no obvious source of the discharge is found on routine examination, investigation of the upper genital tract by examination under anesthesia and curettage should follow immediately. Blood stained leucorrhea or "a little smudge" is a frequent complaint of postmenopausal patients. Usually it is the result of vaginitis with its typical physical changes, but the possibility of malignancy should be borne in mind constantly; and if active treatment of the vaginitis does not relieve the symptoms within two or three weeks, hospitalization with curettage and biopsy should be advised.

Any bleeding after the menopause, no matter how little, is abnormal and should suggest the presence of carcinoma to the physician, the existence of which must be disproved before the institution of treatment. There is no such thing as rejuvenation with the reappearance of menstruation at this age. The institution of local treatments, douches or hormone therapy, upon the assumption that the bleeding is benign in origin, not only delays prompt diagnosis and therapy but may even stimulate the spread of an early malignant lesion. Malignant disease of the lower genital tract, such as carcinoma of the vulva, usually gives rise to minimal staining, as does car-

cinoma of the vagina which accounts for two per cent of genital malignancies. The majority of vaginal carcinomas occur as transplants secondary to the malignancies of the upper genital tract. Therefore, the presence of a vaginal lesion suggests not only biopsy of the lesion but also examination under anesthesia and a diagnostic curettage. Although cervical cancer is supposedly a disease of the premenopause, a large number of such lesions develop after the change of life. Indeed twenty-six per cent of the cases that have been reviewed by the Committee for the Study of Pelvic Cancer consisted of postmenopausal cervical carcinomas. Formerly, postmenopausal bleeding from the uterus was recognized as a symptom of malignancy of the upper genital tract in seventy-five per cent of the cases. Recently the widespread use of estrogenic therapy has changed this picture. It is well known that estrogens cause postmenopausal bleeding. It is also well known that uterine cancer causes such bleeding even during the administration of this therapy. While little evidence exists to suggest that artificial hormone stimulation induces carcinoma, no evidence exists to indicate that it prevents such a development. The management of patients with postmenopausal bleeding while under estrogen therapy has been discussed. The previously outlined policy of watchful waiting does not apply to the development of postmenopausal bleeding in the absence of estrogenic therapy. Under this circumstance, examination while the patient is bleeding is advisable; and if this is not feasible, thorough study should proceed without delay. While repeated Papanicolaou smears may help, the chance of error is so high that immediate examination under anesthesia and diagnostic curettage are indicated. The discovery of a cervical polyp or erosion that could explain the bleeding does not remove the need for complete investigation. Experience has taught that cervical polyps frequently are associated with endometrial carcinoma. Therefore, proper management consists of diagnostic curettage at the time the polyp is removed.

*Interval Examinations.* The most favorable time for the diagnosis of malignancy of the genital tract is before the onset of symptoms or before symptoms drive the patient to the physician. This is to be accomplished only by routine, regularly spaced interviews and examinations. The recommended in-

terval is once every six months. Prior to examination the patient should receive the benefit of a very thorough history. It is only by this measure that seemingly unimportant developments are brought to light. The simple question, "Do you have any troubles?" is not adequate as a gynecologic history in the menopausal age. A complete history should include detailed questioning regarding breast and pelvic symptoms and special attention to the question of leucorrheal discharge, staining, or bleeding. Examination should begin with thorough inspection and palpation of the breasts, with the patient first in the recumbent and then in the sitting position. Following this, a careful abdominal and pelvic examination should be conducted. After inspection of the external genitals, a bimanual examination is done; and the gloved finger is inspected for the possibility of blood stain. Following this, a vaginal speculum should be introduced with good illumination, and the cervix and the entire vaginal wall inspected. Simple palpation of the cervix and the vaginal wall is not sufficient. There should be no areas of ulceration or erosion at this age. Such areas indicate immediate biopsy with microscopic examination. Following the biopsy the site should not be treated by cauterization or desiccation until the pathologist's report is at hand. The use of vaginal tamponade or local sutures is preferable, for the pathologist may ask for more tissue and if the area has been cauterized, the request cannot be granted because of the recent injury to the suspected tissue. At termination of the speculum examination, a digital rectal exploration of the rectum, including palpation of the genital structures, should be conducted as a final step in every pelvic examination.

The fact that over half the instances of delay in the diagnosis of pelvic cancer have occurred in postmenopausal women forcibly impresses the importance of this age in the field of early detection. No doubt older patients, for various reasons, avoid medical attention in the absence of and even in the presence of symptoms—the significance of which they underestimate. Modern educational campaigns are combating this tendency, and the medical profession can help by urging regular interval examinations and by giving serious consideration to any complaint that can possibly suggest the presence of malignant genital disease. This consideration should consist of a careful his-

tory, a detailed gynecologic examination, with repeated Papanicolaou smears, and biopsies of all suspicious areas. Treatment should be instituted only after the suspicion of malignancy has been confirmed or disproved. Finally, the policy of six month interviews and gynecologic examinations upon all female patients past the age of forty frequently will enable the detection of genital cancer either before it produces symptoms or before the symptoms have existed long enough to indicate hopeless advance of the disease.

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**The Doctor in Politics**—Why should any doctor enter politics? How can he spare the time? At first glance you brush off the subject as fantastic. Medicine is an exacting wife who forbids even a fleeting glance toward the tolerant political siren. Lacking constancy this marriage is nothing.

But there is another view. Democracy was not a divine gift miraculously dropped into the center of the North American continent. It was fought for and bled for and died for by practical idealists. It was molded and nurtured and protected by honorable men to whom freedom was of even greater value than life itself or anything life offered. Among these were doctors—doctors whose honorable marriage to the science of medicine was unquestioned. They left not in pursuit of adventure but in the deadly earnest endeavor to preserve the integrity of their heritage.

They were doctors who cared for the sick, but before that they were citizens who accepted a larger personal responsibility toward the people they served—that of giving them through the offices of government, the advantage of their knowledge, their integrity, their idealism and their example.

And why not? What is improper about the concept that government is the place for our most enlightened citizens and our most honorable? Is there any valid support of the pitiful popular notion that any person is so preoccupied that he cannot serve his state or nation in public office? Where is the sense of the theory that government offices become the heritage of the misfits and the unsuccessful in private enterprise? Indifference toward our most terrible responsibility is the cause of this situation and unless successful doctors, together with outstanding citizens in all other walks of life, rise to demand integrity in government, unless they step forward to bring integrity into government, we may never find it again.

This is not critical any more than you criticize the sun for shining during the day when there is enough light already rather than at night when it is needed. It is rather a tribute to those physicians for the personal sacrifices they have made to give us the state and the nation we have today.  
—*Editorial Comment, J. Kansas M. Soc., June '52.*



## NON-PENETRATING INJURIES OF THE ABDOMEN

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In contrast to war injuries, abdominal injuries resulting from civilian accidents are preponderantly of the closed or non-penetrating type. Any discussion of such injuries must necessarily emphasize the diagnostic aspect of their management. Indeed, closed injuries demand considerably more diagnostic acumen and better judgment than do injuries of the penetrating type. In dealing with the latter, our task is made relatively light by the sound dictum that the mere presence of an open wound of the abdominal parietes renders laparotomy obligatory. On the other hand, when there is no such wound to serve as a guide, we are often sorely taxed to decide whether or not within the confines of the abdominal wall there is damage that demands surgical intervention.

It should be pointed out in the beginning that no uniform relationship exists between the degree of damage to intra-abdominal viscera and the severity of the blow inflicting the injury. For example, a spleen may be ruptured by a fall from a height not exceeding three or four feet. Often there is no contusion, ecchymosis, or other external evidence of the force of the blow causing the injury.

In the attempt to evaluate the patient suspected of having intra-abdominal injury, the following observations have been made:

(1) In general, the degree of shock is a fairly reliable sign not only of the degree of damage to intra-abdominal structures but also of the prognosis of the patient. It has been said that the gravity of the prognosis is directly proportional to the degree and persistence of the state of shock. The presence of shock, unexplained on the basis of head injury or other obvious precipitating cause not related to the abdomen, implies either intra-abdominal hemorrhage or massive peritoneal soiling. The existence of this state is of itself sufficient indication for laparotomy.

(2) Tenderness and spasm elicited on palpation of the abdomen are often extremely difficult to evaluate. A direct blow on the abdominal wall may produce injury to the structures of the abdominal wall itself that result in extreme tenderness and

splinting even though no intra-abdominal injury exists. Such an injury, however, is not attended by signs of shock, and careful palpation will usually allow the true state of affairs to be judged. Rebound tenderness usually is elicited only in the presence of intraperitoneal hemorrhage or soiling. Localized tenderness often can be elicited in the region of a damaged solid viscus, such as the spleen, liver or kidney; or in the presence of a ruptured urinary bladder. Generalized abdominal rigidity is usually found only in the presence of massive peritoneal contamination associated with a large opening in a segment of the gastrointestinal tract.

(3) Auscultation of the abdomen is sometimes informative. Absence of audible peristalsis usually means perforation of the gastrointestinal tract, or a retroperitoneal hematoma of some considerable size.

(4) Percussion of the abdomen has in my experience yielded little information of value. If shifting dullness is present, it means massive hemoperitoneum, but this is rarely seen, and, if present, there are usually other signs that make the diagnosis obvious.

(5) Rectal examination sometimes elicits the presence of tenderness which suggests free blood in the pelvis or contamination of the pelvic peritoneum. The presence of blood on the examining finger is of course a definite sign of ruptured intestine.

(6) Auxiliary modes of examination should be utilized to the fullest. Aspiration of the stomach by a Levin tube may yield blood, a presumptive sign of perforation of the stomach.

Urinalysis is obligatory. If gross or microscopic hematuria exists, further investigation must be carried out, for it may be associated with injury to any part of the genito-urinary tract.

X-rays are often of assistance. If rupture of a hollow viscus cannot be ascertained with certainty, an upright film of the abdomen may reveal air beneath the diaphragm. The absence of demonstrable air, however, does not rule out perforation of the gastrointestinal tract.



The demonstration of fracture of the lower ribs on the left makes one suspect the possibility of a ruptured spleen or kidney, and the same fractures on the right often co-exist with an injury to liver or kidney.

#### MANAGEMENT

In the management of abdominal injuries attention must first be directed toward the institution of resuscitative measures. The administration of ample quantities of whole blood is the most effective, and indeed the only effective means of overcoming shock. While typing and cross-matching are being carried out, pooled plasma or, better if available, human serum albumen should be given. It is quite generally recognized today that it is unwise to take an injured patient to the operating room until resuscitation from shock has been effected. On the other hand, it may not be fully appreciated that undue delay may be brought about by too persistent effort to overcome shock. If, after the administration of 1500 or 2000 cc. of blood, which should require no more than two or three hours, the patient has not responded, it is probable that persistent hemorrhage is taking place. In such case further delay is unwarranted and the patient should be taken to the operating room and transfusions continued during the course of laparotomy.

The insertion of a Levin tube and aspiration of the stomach must precede any operation in the presence of abdominal injury.

Once the decision to operate has been made, nitrous oxide-oxygen-ether is the anesthetic agent of choice.

A right or left rectus incision is probably the most useful incision, the choice being governed by local findings.

Once the abdomen has been opened, treatment is governed by the findings. Time allows but a cursory survey of the handling of injuries to specific organs.

(1) Liver: The management of liver injuries has been made considerably easier and more effective in recent years by such recent additions to the surgical armamentarium as gelfoam, oxycel gauze, and the broad spectrum antibiotics. In general, the management of such injuries is directed against the following consequences of liver injury: (a) hemorrhage, (b) bile drainage, and (c) infection. It is axiomatic that once injury to the liver has been diagnosed immediate operation is indicated. At opera-

tion it may be found that the laceration is a superficial linear tear which is of little consequence and usually controlled by the application of a few mattress sutures; or a very extensive stellate laceration as a result of which much of the liver substance has been reduced to a pulp-like mass. Provided the laceration is of a linear type, it is desirable and usually possible to control bleeding by the application of gelfoam or fibrin foam, if such is available. Oxycel gauze has a satisfactory application in this instance likewise but is more likely to be associated with a febrile reaction. If none of these substances is available, a fragment of muscle is an effective aid in the control of hemorrhage. Mattress sutures can be placed deep in the substance of the liver and can be loosely approximated in such a way as to control active bleeding without cutting into the liver tissue. In the event that the laceration is of a stellate type, it is usually impossible to suture the rent adequately. In this event gauze packing can be introduced for the control of hemorrhage and should be left in place for several days. In my opinion, a period of seven days should be allowed to elapse before any attempt at withdrawal of the packing and it should then be removed a little at a time over a period of three or four days. Leakage of bile from the site of laceration is a particularly annoying problem if the laceration of the liver is of any magnitude. Simple suture of the liver will not usually control the drainage of bile. For this reason, it is of utmost importance for adequate external drainage to be accomplished. This can usually be effectively done by the use of large cigarette drains leading from the site of the liver laceration through a stab wound in the abdomen. Even with the use of such drains, localized collections of bile may develop and necessitate incisional drainage at a later date. Infection is prone to occur after extensive laceration of the liver, and for this reason heavy doses of antibiotics, preferably chloromycetin or aureomycin, are to be used immediately after operation.

(2) Spleen: The presence of a lacerated spleen demands, in nearly all cases, splenectomy with all possible dispatch, because of the alarming hemorrhage that is usually present. In rare instances, a small laceration may be found which may be controlled by the application of gelfoam or fibrin foam. It may be worth while to interject at this point a word of caution about the so-

called subcapsular rupture of the spleen. The presence of definite pain and tenderness in the left upper quadrant, without evidence of active bleeding, should make one suspect a subcapsular rupture. In such a case sudden hemorrhage may occur after a lapse of several days; therefore the patient must be kept quiet and under careful observation for seven to ten days, when the danger of hemorrhage has passed.

(3) Kidney: The presence of a ruptured kidney is manifested by the presence of blood in the urine, but since hematuria may accompany injury of almost any degree to any part of the genito-urinary tract, special differential studies are usually necessary to make the diagnosis. Intravenous pyelography is a reliable means of detecting a ruptured kidney. If, however, laparotomy is necessitated early, the presence of a large and growing hematoma in the region of the kidney may serve as a safe diagnostic guide, though it is not infallible. A ruptured kidney may be either sutured or removed, depending upon site and size of the rupture. It is not necessary to point out that it is not considered judicious to remove a solitary kidney regardless of its condition!

(4) Bladder: A ruptured bladder is most commonly found only in association with a fractured pelvis; but it should be pointed out that a full bladder can be ruptured by a relatively mild concussion. The presence of a ruptured bladder demands cystostomy with the use of an indwelling catheter. Usually it is useless and unnecessary to attempt repair of the laceration unless it is intraperitoneal, for this organ has remarkable properties of spontaneous healing if completely decompressed. Hemorrhage from the extensive plexus of veins about the bladder neck may at times be alarming but can be effectively controlled by packing.

(5) Gastro-Intestinal Tract: Lacerations of the stomach must be closed. The same is to be said for injuries to the duodenum, jejunum, and ileum. The size of the tear may be such as to make segmental resection and end-to-end anastomosis the method of choice. This is especially true if attendant injury to the mesenteric vessels exists so as to render the blood supply precarious.

Considerable latitude is allowed in the management of lacerations of any segment of the colon. If the rent is small and the injury very recent, simple closure is desir-

able. In such event some surgeons elect, after closing the rent, to exteriorize the segment for a period of 6 to 8 days, then, if it is securely healed, to drop it back into the peritoneal cavity. If the laceration is large, making closure difficult, or if more than a few hours have elapsed since injury, then colostomy is safer than closure.

Postoperative decompression of the gastro-intestinal tract by the use of Wangenstein suction is to be carried out after any type of injury to the abdomen.

(6) Retroperitoneal Hematoma: Except as it is related to possible rupture of the kidney as noted above, a retroperitoneal hematoma is difficult to evaluate and decision as to its management is perplexing. By and large it is advisable not to attempt evacuation of the hematoma. And yet, when confronted with the problem, one must realize that the hematoma may be co-existent with a retroperitoneal rupture of the colon, and so may be followed by overwhelming infection. With these points in mind, the surgeon must base his decision upon the dictates of his best judgment in the case at hand.

(7) Injuries to Great Vessels: Their management may be dismissed by the observation that control of hemorrhage from the aorta, inferior vena cava, or one of the other large vessels may be a very taxing problem. However, if control is to be achieved it must be done by the use of very fine, carefully applied sutures; these can be inserted while hemorrhage is temporarily controlled by bull-dog clamps, or the fingers of an assistant. Fortunately, such injuries are rarely encountered.

(8) For the sake of completeness it should be mentioned that injuries to the anterior abdominal wall itself may require operative intervention. A severe blow upon the abdomen may cause laceration of one of the epigastric vessels. This may be attended by development of a hematoma of large proportions which requires evacuation with ligation of the vessel.

So much may be said regarding the management of cases of non-penetrating injuries to the abdomen. In many instances, after careful evaluation of the patient, it may be judged that operation is not indicated. Often it may be assumed that a period of observation is justified before decision is made as to the necessity for opera-



tion. During this observation period the patient should be placed at complete bed rest, given sedation to control anxiety but not opiates to mask symptoms, and reexamined at frequent intervals. During this time regular observations of pulse and blood pressure must be made, as well as frequent determinations of the blood count and hematocrit. It is wise to withhold fluids by mouth and to maintain decompression of the gastro-intestinal tract by use of Wangenstein suction. If there develops a rising pulse rate, declining hematocrit, or if abdominal tenderness or spasm increase, then operative intervention should be undertaken without further delay.

It is significant to note that in a recent review of a large series of abdominal injuries

a very creditable overall mortality rate of 13% was reported.<sup>1</sup> In this series the mortality rate of those patients subjected to immediate laparotomy was 7.5%, while of the group in which operation was carried out after a period of observation, or was not done at all, the mortality rate was 22%. Bearing these figures in mind, I think it fair to make the observation that, if there is doubt in one's mind as to diagnosis, it is the safer policy to carry out laparotomy, and that negative findings in such a case need cause the operator no embarrassment.

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## PRESENT CONCEPTS OF REHABILITATION OF TUBERCULOUS PATIENTS

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#### INTRODUCTORY REMARKS

Previous sessions of this Association have heard excellent reports concerning active therapy currently in use in the field of tuberculosis. During recent months a new series of chemotherapeutic drugs (isonicotinic acid hydrazide and variants) has been introduced and offered for experimental use. While there is as yet no scientific evidence of reliable character, there is good basis for hope that one new weapon has been found. Other than this development, there is nothing startling to report with regard to either medical or surgical therapy.

With the above thought in mind, and recalling that no previous discussion of the usefulness of rehabilitation procedures in the restoration of tuberculous individuals has been presented to this group, it seemed expedient to review this important phase of therapy at this time.

#### HISTORICAL CONSIDERATIONS

Since the dawn of medical history, physicians have been forced, either consciously or unconsciously, to give consideration to rehabilitation in the overall picture of recovery from pathologic states of all kinds.

Early expressions of social awareness of

the problems of handicapped individuals began to be manifest during the 18th Century. The employment practices of the British Government in 1780 provided for three classes of preferred candidates for civil service, one of which was: "Those whose defects make them an abomination. They shall be obligated to work, and, if they refuse, a few stripes and the withdrawal of food." Kratz<sup>1</sup> reports that a well-known English orthopedic surgeon of about the same period observed: "Their faults can be removed by moral and intellectual training." Orthopedic specialists thus began early to be conscious of the need for deliberate attempts to rehabilitate handicapped persons. So it was that, with the development of surgical and diagnostic skills and the establishment of specialized hospitals and clinics for the treatment of orthopedic cases, there was a concomitant expression of interest in, and expansion of, previous programs of rehabilitation. In New York City, in 1863, a hospital was placed in service for "ruptured and crippled children." Similar projects were soon underway in Boston and in the state of Minnesota, and by

Read before the Association in annual session, Montgomery, April 18, 1952.

1. Kratz, John A.: Vocational Rehabilitation of the Physically Handicapped, *Vocational Education Bulletin No. 90*, U. S. Department of Interior, Office of Education, 1936.



1914 sixty-four similar institutions were in operation.

Demonstration of the striking accomplishments of professionally directed programs, devoted to the special needs of limited groups of handicapped persons, readily suggested expansion of the same general techniques to solve similar problems for other groups of handicapped individuals. An intensive investigation of employment opportunities and analysis of the data so secured for use in rehabilitation programs was carried out in 1908 by the Russell Sage Foundation and a voluntary group in New York City, known as the Bureau for the Handicapped. This produced, by 1914, ample evidence of the possibilities of this field and resulted in great widening of the previously narrowly restricted activities advocated for handicapped persons; i. e., the blind could do more than make brooms. The very earliest organized project for the tuberculous probably was in France under the direction of Vaudremer about 1896, but the British pressed their projects more vigorously and were only a few years behind the French in starting. Hence, most of the pioneer efforts that served as prototypes of existing rehabilitation plans developed in Great Britain. An industrial colony was proposed by Dr. Hermann Biggs in 1910, and the Bourn Colony was actually founded by Varrier-Jones in 1916.<sup>2</sup> This colony was the precursor of Papworth Village, which is by far the finest project of its type and world-renowned for its accomplishments. Soon tentative projects were considered or actually begun in Holland, Russia, the United States, Denmark, Sweden, Germany and Italy. The soundness of the philosophy of rehabilitation had then secured wide acceptance, and practice of the principles involved began to follow.

The earliest project in the United States was organized in 1908 by Dr. A. M. Forster, and upon activation it was known as the Eudowood Farm Colony, situated in the state of Maryland. Heaf and McDougall<sup>3</sup> described the procedure used there. In brief, patients were transferred from sanatorium wards to adjacent farms where work was

adapted to their ability to participate. At times, entire families were brought into the project. Under the careful supervision afforded them, very few relapses were noted, and many patients were able to salvage months of partial idleness by utilizing this time and the available facilities to learn a suitable vocation.

The entire question of the post-hospital program for persons with arrested tuberculosis turns about realization of the fact that, as Sir William Osler so truly stated, "Tuberculosis is a social problem with a medical aspect." How can the newly arrested case return to poverty, malnutrition, a needy family, his work as a poorly paid laborer, and hope to realize the full benefit of his hospital care? To return him to such circumstances invites relapse and spread of disease to family contacts previously uninfected. This further increases the need for medical care, and pyramids the hidden costs of tuberculosis as represented in lost income, lost productivity and direct financial loss to the community for further treatment and welfare aid.

These are the reasons that intelligent use of the techniques demonstrated by Forster, the Henry Phipps project, and the examples of Eudowood and Papworth Village are becoming more and more widely recognized as the final step in a tuberculosis control program.

Dr. C. G. Brink<sup>4</sup> of the Ontario (Canada) Department of Health outlines his concept of the modern tuberculosis control program as follows:

- a) Early diagnosis.
- b) Prompt sanatorium treatment.
- c) Adequate post-sanatorium care.
- d) Social service.
- e) Rehabilitation.

Failure of the community to afford full use of each of the above factors militates against the ultimate accomplishment of true control of the disease. Failure to observe good rehabilitation results in a program in which cases are detected, admitted to hospitals, classified, given appropriate therapy and, in general, brought to a status of host-invader balance (i. e., quiescent), and then discharged only to find that the apparent benefits are soon lost as a result of early re-

2. Varrier-Jones, Sir Pendrill: *The Rehabilitation of the Tuberculous*, Appendix D, *Papers of a Pioneer*, 89: 104, Hutchinson & Company, Ltd., London, 1943.

3. Heaf, F. R. G., and McDougall, J. B.: *Rehabilitating the Tuberculous*, Faber and Faber, Ltd., London, 1945, 142 pages.

4. Brink, C. G.: *Tuberculosis Control*, *Canad. J. Pub. Health* 37: 1-6, January 1946.

lapse, often with further pulmonary destruction. Thus does the disease exhibit its predilection for slow progression. This process cannot be controlled by rehabilitation processes but it can in part be favorably influenced by these techniques.

As so truly stated by Plunkett, failure to rehabilitate serves to perpetuate the vicious circle of poverty and tuberculosis which foster each other, and this can be halted only if "those concerned with the control or eradication of this disease (must) do more than provide diagnostic and therapeutic facilities."<sup>5</sup>

The forms that existing projects have assumed have, of course, varied widely from place to place, depending upon the interests of those who initiated and guided the developments, the needs of the community involved, and the financial considerations incidental to the undertaking. In Great Britain the success of Papworth Village is responsible for the popularity of "colony type" establishments where trainees and their families reside and work. Of these there are at least seven. Similarly, in continental Europe, the projects have tended to follow this pattern.

Contrarily, in the United States, no "colony type" institution has been tried. The social stigma involved in full residence of the patient and his family in surroundings labelled in this fashion would be quite a barrier.

The more desirable solution in this country has proven to be either the sheltered workshop or the training center system. The training center is exactly what the name implies. Suitable candidates are medically screened and submitted to preparatory interviews and given appropriate tests to detect aptitudes, and employment possibilities are considered. From these data the candidate is placed in training in the appropriate course for the number of hours per day that his medical condition will permit. During training his medical status is frequently reevaluated, and the conditions of training are altered if desirable. Some phases of work can be successfully accomplished while the trainee is still hospitalized, but usually the major portion of training is accomplished during the first six to

eight months of the post-hospitalization period. No production schedule is set; gainful employment during training is a secondary consideration, and usually no effort is made to provide dormitory facilities.

The sheltered workshop plan proceeds past the function of the training center in some respects but in other ways is a more limited approach. The workshop provides training as an incidental activity. Its principal function is competitive production, and usually such a shop functions in a narrow group of related trades as opposed to a training center, which may incorporate within its program any number of varieties of related trades, crafts, or professions.

The relative merit of the two systems can be judged only on the basis of the intended accomplishment, and this again must be tailored to the needs of the community as a whole, and then adapted to the aptitudes, interests, and physical limitations of the prospective trainees.

Excellent examples of the training center type of institution are to be found in the Potts Memorial Institute at Livingston, New York and the Rutland training center at Rutland, Mass. Numerous other fine institutions of this sort are in operation, the largest of which is doubtless the Veterans Administration center at Swannanoa, North Carolina.

#### PRESENT PRACTICE IN THE UNITED STATES

The principles of operation of these facilities vary in detail from one institution to another but in all cases the aim is to:

- 1) Select cases which are stable, as determined by existing clinical evidence obtained by x-ray and laboratory studies and by consideration of the physician's intimate knowledge of the individual case.

- 2) So to regulate activities that the probability of relapse will not be significantly increased beyond that unavoidable percentage of relapse that is normally anticipated in recent discharges.

- 3) To provide close enough medical supervision as training progresses to detect early signs of impending relapse, and to institute appropriate steps to reverse the tendency, if possible, or to re-treat the case if this becomes necessary.

The following considerations must guide the physician in the selection of cases for training, and the selection of the type of activity to be undertaken:

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5. Plunkett, Robert E.: Tuberculosis as an Economic and Social Problem, Connecticut M. J. 8: 9-13, January 1944.



- 1) Improving or stable x-ray appearance.
- 2) Sputum and associated laboratory findings indicate probable stability of lesion.
- 3) General physical condition satisfactory.
- 4) Absence of suggestive symptoms, such as fever otherwise unaccounted for or excessive sputum production.
- 5) Status of therapy such that it will not conflict with training program contemplated.

Data from the Rutland, Mass.<sup>6</sup> center are thought to indicate what a properly, integrated and carefully planned system can be expected to accomplish. During the period 1939-1945 they report the following experience:

- 1) 192 cases referred.
  - a) 20 were not accepted for training.
  - b) 24 were still in training at the time of report.
  - c) 9 left training for non-medical reasons.
- 2) 139 cases were rehabilitated.
  - a) 126 remained well and self-supporting.
  - b) 4 died (2 of tuberculosis, 2 of other causes).
  - c) 3 relapsed and returned to Sanatorium.
  - d) 3 returned to jobs following re-treatment.
  - e) 1 confined to mental hospital.
  - f) 2 unheard from for in excess of 6 months.
- 3) 37 cases permanently closed after 5-year follow-up.

Development of rehabilitation facilities is rapidly progressing throughout this country. This is due, in great measure, to financial assistance and personnel guidance provided on a fund-matching basis by the Federal government and the various states. This is reflected in the fact that in 1941 only 1,273 cases of tuberculosis were processed in the entire country, whereas in 1951 5,807 such cases were processed. This represents almost a five-fold expansion of service over a

period of 11 years. Alabama has lagged in participation but is rapidly catching up. Until November of 1950 no training center specifically designed for rehabilitating tuberculosis patients was in existence. During that month such a training center was placed in service in Montgomery.

This center was constructed on the grounds of the Montgomery Tuberculosis Sanatorium by the Montgomery Tuberculosis and Health Association by use of funds raised in Montgomery County through the sale of Christmas Seals. The cost of building and equipping this center approximated \$20,000.00. It was intended to serve any resident of Alabama who is medically suited to accept training and for whom vocational guidance is needed.

More recently, another center has been provided at Decatur which will operate in conjunction with District No. 1 Tuberculosis Sanatorium. The type of courses to be offered there and the mode of operation are in most respects similar to the Montgomery center, and it is thought, therefore, that a description of the local operation will suffice to outline the other as well.

The operation of the center is a cooperative project of the Department of Vocational Rehabilitation of the State Department of Education, the Montgomery Tuberculosis and Health Association, and the Montgomery Tuberculosis Sanatorium. As indicated previously, the Montgomery Tuberculosis and Health Association is a voluntary group, and it was their initial effort which provided the present facility. The State Department of Education, through its Division of Vocational Rehabilitation, furnishes the following:

- 1) Funds for salaries and supplies.
- 2) Day-to-day administrative supervision.
- 3) Regulation of professional status of the courses offered.
- 4) Field work involved in locating prospective trainees.

The Montgomery Tuberculosis Sanatorium undertakes to survey medically all applicants for training and to advise concerning the suitability of the proposed plan from the medical standpoint, and, in addition, to maintain necessary medical supervision to protect the trainee against deterioration of his medical condition.

6. White, Harding L., and Maloney, Robert W.: The Training Center Plan for Rehabilitation of the Tuberculous at Rutland Training Center, An Interim Report, 111: 112, National Tuberculosis Association, New York, N. Y., 1946.



Courses now available at the Montgomery center are as follows:

- 1) Home economics.
- 2) Commercial subjects.
- 3) Dressmaking.
- 4) Tailoring.
- 5) Cosmetology.
- 6) Cabinet making.
- 7) Radio repair.

This is not to be construed to mean that no other courses will be offered, but these are the only ones we have facilities for at the present. There is space available for other courses and we would gladly add them if we had the demand.

This center, operating at maximum capacity, could serve up to 45 trainees at any given time. In practice, the rate of operation has never exceeded 50 per cent of this number and has often been nearer 30 per cent. Even so, examination of our records by Mr. David Young of the Division of Vocational Rehabilitation indicates the following statistical description of our accomplishments:

- I. \$11,837.00 was spent for training.
- II. 48 persons entered training.
- III. Therefore, the mean expenditure per trainee was \$246.00.
- IV. 21 completed training.
  - a) 15 employed full-time or part-time in trades studied.
  - b) 3 others completed courses and await placement.
  - c) 3 are unemployed because of physical reasons.
    - d) 9 are currently in training.
    - e) 13 dropped out.
      - 1) 2 because of medical reasons.
      - 2) 11 for other personal reasons.
    - f) 4 are employed in occupations other than those for which they were trained.
    - g) 1 died of tuberculosis.

Of the 48, only 4 failed from medical causes. This represents an incidence of only 8 per cent and, as opposed to the commonly experienced ratio of early relapse, this cannot be regarded as excessive. The striking similarity of these figures and those previously quoted from the Rutland, Mass., project is worthy of notice.

We are hopeful that you will encourage your tuberculous patients to accept these

services which are freely available to them, and that the existing facilities can be placed in more complete use. The County Health Department will know the Rehabilitation Counselor responsible for your county. Make your referral to the Counselor and he will follow through in making necessary arrangements.

#### CONCLUSION

1) Rehabilitation procedures can often be used to assist handicapped persons of all types.

2) Tuberculous patients offer special problems and demand different approaches but can also be greatly benefited.

3) The cost of this service is not excessive.

4) It is medically sound.

5) You have at your command up-to-date facilities.

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**Cancer Surgery**—Historically it is of interest that Billroth made the first report of multiple carcinomas in 1889 and he set forth postulates which would identify them as independent growths. The postulates were as follows: (1) the two growths should differ histologically; (2) each growth must spring from its parent epithelium, and (3) each growth must be regarded as responsible for its own group of metastases. Such postulates cannot be fulfilled in a living patient with two carcinomas in the large bowel, neither of which has metastasized, and Bunting pointed out that these postulates could only apply to malignant tumors arising in different organs. Warren and Gates very aptly broadened the original postulates in 1932 as follows: "Each of the tumors must present a definite picture of malignancy, each must be distinct, and the possibility of one being a metastasis of the other must be excluded." A fourth postulate was added by Mercanton in 1893 who believed that "if, after removal of the two carcinomas, the patient remains free from the disease, the two growths must have been independent else there should have been other metastases." Naturally this implies that a considerable length of time elapse between the discovery of the two growths.

When one considers that about 15% of persons over 40 years of age have polyps of the colon and that  $\frac{3}{4}$  of the polyps are located in the sigmoid and rectum, one must admit further evidence favorable to the thesis that polyp of the lower gastrointestinal tract is a precancerous lesion and should be destroyed on discovery. Some observers go so far as to assert that all polyps of the colon either are carcinomas or will become carcinomas if they are not destroyed or if the patient lives long enough. This is a dogmatic statement but one which I find not too difficult to concur in.—Rankin, J. *Kentucky M. A.*, July '52.

## THE MANAGEMENT OF FRACTURED HIPs IN A SMALL HOSPITAL

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### INTRODUCTION

It is a privilege to relate our experience in Huntsville in the field of fractured hips—a subject which will come more and more to our attention as the life expectancy of our population continues to increase. There are several reasons why fractures of the hip have in the past been called the unsolved fracture: first, the advanced age of the patient affected by this type of fracture; second, the peculiar character of the bone that is directly involved; third, the quality and distribution of the blood supply to the site of injury; and fourth, the weak anatomic location from the point of view of mechanics.

### ANATOMIC PATHOLOGY

The term fractured hip as commonly used designates a fracture of the neck, trochanteric, or immediate subtrochanteric regions. It is common knowledge that not only the location but the obliquity of the fracture line is of paramount importance in the prognosis for osseous union. For the purpose of this paper, suffice it to say that the fractures may be classified according to their location as subcapital, transcervical, basilar, intertrochanteric, or subtrochanteric; and the subdivision of each fracture as being horizontal, oblique or vertical in type, with or without comminution. As a general rule, it may be said that the nearer the fracture is to the head of the femur, the less likely it is to unite, due, at least in part, to the poorer blood supply and smaller areas of opposing bones; and the more vertical the fracture, the less likely it is to unite, with the "shearing force" perhaps being responsible here. The converse of these two statements is also true.

The distribution of the blood supply to this area is variable, but it has been shown that if the branches of the anterior and posterior circumflex vessels which line the capsule are severed at the time the neck is fractured, the fragile vessels in the ligamentum teres are insufficient to nourish the head in the adult, and the entire proximal fragment dies.

The displacement in these fractures is

largely due to muscular action, the distal fragment being displaced upward, backward, and rotated outward. In addition, in subtrochanteric fractures there is considerable lateral angulation.

### ETIOLOGY

The direct causes of fractures of the neck of the femur vary with the age of the individual. In young and middle aged patients only severe direct violence, such as automobile accidents and falls from heights, cause these fractures. In the older age group, where the vast majority of these fractures occur, only a very slight violence is necessary. In fact, it is often said, with some good reason, that by a slight misstep, or twisting of the trunk on the leg in taking a step, the patient fractures the hip and then falls.

The neck of the femur joins the shaft at an angle of 120 to 130 degrees. This is said to be more nearly a right angle in women than in men and probably accounts for the greater frequency of these fractures in women than in men. It is also quite possible that senile osteoporosis is more common in women. This fracture is so common in the aged that if an elderly person falls and is unable to rise, it may be assumed that he has a fractured hip until proven otherwise. The appearance of the extremity is similar to that of a flaccid paralysis. Anteroposterior and lateral x-rays should be used to determine the type of fracture.

### TREATMENT

The treatment of fractured hips has advanced a long ways since the old days of sandbags and Buck's extension. Time will not permit a discussion of the various methods of reduction, the dozens of ingenious guides, or the various nails and methods of internal fixation which have been devised; except to mention the description of the three-flanged nail devised by Smith-Petersen, which was published in *Archives of Surgery* in 1931, and the cannulation of the nail by Johansen in order that a guide wire might be used for introduction. Various plates have since been devised for attachment either by screws or directly to the nail for extension down the shaft of the



femur in intertrochanteric and subtrochanteric fractures.

Huntsville lies sufficiently remote from the nearest orthopedic clinic—that is, at least a hundred miles in any direction—to render impractical, if not hazardous, the transportation of these aged patients above whose graying heads and ebbing resistance hangs the ever present Damoclean three-flanged sword of senile dementia, hypostatic pneumonia, and pressure sores. It, therefore, seemed desirable to investigate some existing method or combination of methods which, in the hands of a general surgeon or a general practitioner, might be successful. While there is nothing new or original about this method, it seemed worth while to describe it since, in our hands, as occasional hipnailers, it has been quite satisfactory.

#### REDUCTION

The reduction is carried out by means of the Roger Anderson well-leg splint. This splint is an ingenious arrangement of levers and counter-leverage by which the affected limb is extended through traction on the well limb. There is also an attachment by which the affected limb may be internally rotated. The fracture may be completely reduced by this splint, which is attached to both extremities by plaster casts. I have personally used this method of reduction in fifty-six cases, including all fractures ranging from subcapital to subtrochanteric, with satisfactory reduction being obtained in each case. There was one exception in which the patient had an ankylosed knee held in a position of flexion and the Leadbetter maneuver had to be used in this one case. The advantages of the splint are that it allows gradual reduction to be carried out during the administration of digitalis, penicillin or insulin; that it does not interfere with the administration of spinal or any other anesthetic, and that it allows plenty of time for preoperative x-rays from which angulations and measurements may be obtained prior to the anesthetic. No skeletal fixation is used as the cast is applied only temporarily. There are two disadvantages which should be mentioned. The first is a pressure ulcer of the heel. These will occur, no matter how much padding is used, if strong traction is maintained for several days. They must be prevented by all means, for the fracture may heal before the heel. These may be prevented by not putting strong traction on until the night before the

operation, or even after the spinal has released the muscles. The other disadvantage is that the legs are tied together and lateral x-rays, which are just as important as anteroposterior ones and which are difficult to get under any circumstances, can hardly be obtained when the legs are fixed together.

Once reduction has been obtained, the complications having meanwhile received attention, the post-reduction films, with the extremity in a position of maximum internal rotation, are used to calculate the normal angle of the neck and the desired point of entry of the guide pin on the lateral aspect of the shaft. This is done by drawing a line on the x-ray plate up through the center of the neck from a calculated  $1\frac{1}{4}$  inches below the ridge for the attachment of the vastus lateralis at the lower end of the greater trochanter—an identifiable landmark at x-ray and operation. Another line is drawn along the outer edge of the shaft. The angle formed by the extension of these two lines is usually 35 to 45 degrees. The entire procedure is based on strictly mathematical principles, plus the fact that when the extremity is held in maximum internal rotation the axis of the neck is parallel to the table top if the anterior superior iliac spines are level.

#### ANESTHETIC

Local, general or spinal anesthesia has been advocated. Perhaps the most popular form of anesthesia is spinal. At present we use a combination spinal of six to eight milligrams of pontocaine and sixty to eighty milligrams of procaine. Either glucose or blood is usually given during the operative procedure. Vasopressor drugs and oxygen are given if the blood pressure falls to troublesome levels. In addition, with the fracture fixed by the Anderson well-leg splint, if the blood pressure falls too low it is possible to raise both legs to a high angle and rapidly transfuse the patient from his own lower extremities.

#### INTERNAL FIXATION

After the spinal anesthetic is given on the operating room stretcher, the patient is transferred to a fracture table, or to an ordinary operating room table with a cassette holder.

It is imperative that the patient's pelvis be absolutely level. This is done by a simple homemade device with a crossbar and two legs of equal length. The crossbar has



a spirit level attached to it. The two legs of equal length are placed on the anterior superior iliac spines of the patient and they are made perfectly level by slightly turning the patient one way or the other. When this is accomplished one knows that a guide pin inserted parallel to the floor or leveled with the spirit level, which is easier, if properly placed on the center of the lateral aspect of the shaft of the femur, will enter the neck in the lateral view. The point of entry and the angle at which the guide pin should be inserted have already been determined preoperatively.

The field is then prepared, the patient draped, and an incision made down to the bone. The ridge for the attachment of the vastus lateralis is easily located at the lower end of the greater trochanter and a point on the center of the shaft, the desired distance down from the ridge, is selected. A 3/32 inch Steinman pin 9 inches long is then inserted into the shaft of the femur at the desired angle and leveled as it is driven in. In eight out of ten cases, this first guide pin will be in a satisfactory position for the nail. However, in order to lessen the chances of error in our geometry, we now drive in a second guide pin slightly above or below the first and at roughly the same angle. We now find that in nine out of ten cases we can use one or the other. In the remaining ten per cent it is necessary to insert a third or fourth guide pin. The guide pins are driven in for a distance of approximately 3½ inches, and an anteroposterior x-ray is made. It is then necessary to make a lateral x-ray to see whether we are in front of or behind the head. This is done by loosening the screw on the Anderson well-leg splint which holds the affected extremity to the splint. The thigh is then flexed to right angles and abducted. This rotates the neck through an angle of 90 degrees, the x-ray machine is left in the same position, and a lateral view is obtained. Another advantage in having two guide pins is that they will fix the fracture when the thigh is flexed and there is no danger of the reduction slipping. After the anteroposterior and lateral x-rays are made, the affected extremity is again fixed to the Anderson well-leg splint, except that a small nail is dropped into the hole this time, instead of the screw, so that it may be easily released for a final check plate. Once the x-ray shows the guide pin to be in satisfactory position in both views, the length of the guide pin

outside the shaft of the femur is measured. This number is then subtracted from nine, which is the length of the guide pin, the point of the pin in its relation to the cortex of the head is noted, and the length of the nail thereby calculated. The cannulated Smith-Peterson nail is then driven home over the guide pin. Anteroposterior and lateral x-rays are again made to check the final position. The guide pins are removed and, while the check plates are being developed, the wound is closed in layers. If the x-rays are satisfactory, the cast is removed from both lower extremities and the patient returned to his room.

#### POSTOPERATIVE CARE

The best postoperative care for a fractured hip is said to consist of careful neglect. After twenty-four to seventy-two hours, depending upon the condition of the patient, he is gotten up in a wheel chair. If the patient is active he is allowed on crutches in four to six weeks. We allow absolutely no weight bearing for six months.

#### PROGNOSIS

While it is true that the operative procedure carries a definite mortality rate, which any surgeon undertaking this procedure must be willing to accept, it is the general feeling that any patient who could withstand prolonged residence in a body spica, or who could stand several months rest in bed in traction, can withstand the operative procedure. Certainly it is more humane to operate and to relieve the patient's pain than to condemn the aged patient to a short, painful bedridden lifetime of sedation, in traction, terminating usually in non-union and frequently death. While a few of these patients may die from the operative procedure, it has been repeatedly shown that the mortality rate of the operative procedure is less than that from any other treatment, and that the percentage of osseous union without shortening is far greater. The other complications consist of non-union, with or without necrosis of the head or absorption of the neck, and degenerative arthritis.

#### STATISTICS

This is a consecutive series of 150 fractured hips and includes all those admitted to the Huntsville Hospital from September 1943 to September 1951 (tables 1 and 2, and figure 1). The age average was 70.04 years, the youngest being 8 and the oldest 104.

There were 41 males and 109 females. There were 24 hospital deaths, a hospital mortality rate of 16%. This varied considerably according to the type of fracture, the age of the patient, and whether or not the fracture was nailed. There were 76 on the right and 70 on the left. Four charts were non-committal.

TABLE 1

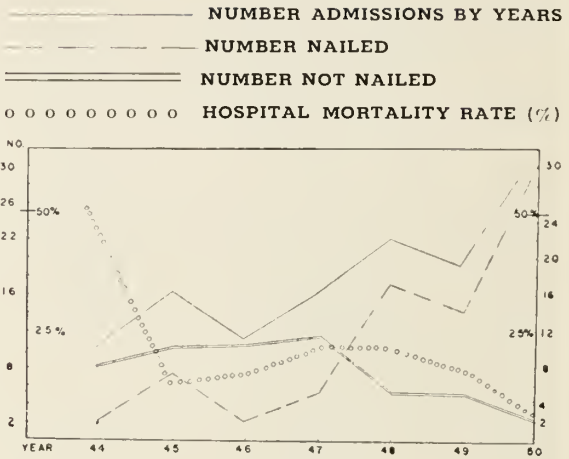
| Type Fracture     | Number Of Cases | Hospital Mortality Rate |
|-------------------|-----------------|-------------------------|
| SUBCAPITAL        |                 |                         |
| Nailed            | 15              | 13.3%                   |
| Not nailed        | 1               | .0%                     |
|                   | (bedfast)       |                         |
| CENTRAL NECK      |                 |                         |
| Nailed            | 26              | 7.6%                    |
| Not nailed        | 19              | 31.5%                   |
| BASILAR           |                 |                         |
| Nailed            | 5               | .0%                     |
| Not nailed        | 1               | .0%                     |
|                   | (child)         |                         |
| INTERTROCHANTERIC |                 |                         |
| Nailed            | 18              | 11.1%                   |
| Not nailed        | 7               | 57 %                    |
| SUBTROCHANTERIC   |                 |                         |
| Nailed            | 5               | 20 %                    |
| Not nailed        | 3               | .0%                     |

The mortality rate on all nailed fractures was 10.1%. On all unnailed fractures, 29.0%.

TABLE 2  
SIX MONTH SURVIVOR FOLLOW-UP

| Type Fracture        | RESULT |       |
|----------------------|--------|-------|
|                      | Poor   | Good  |
| SUBCAPITAL           |        |       |
| Nailed (13)          | 8 %    | 92 %  |
| Not nailed (1)       | 100 %  | 0     |
| CENTRAL NECK         |        |       |
| Nailed (24)          | 21 %   | 79 %  |
| Not nailed           | 67 %   | 33 %  |
| BASILAR              |        |       |
| Nailed (5)           | 0      | 100 % |
| Not nailed (1 child) | 0      | 100 % |
| INTERTROCHANTERIC    |        |       |
| Nailed (18)          | 12.5%  | 87.5% |
| Not nailed (3)       | 100 %  | 0 %   |
| SUBTROCHANTERIC      |        |       |
| Nailed (4)           | 25 %   | 75 %  |
| Not nailed (3)       | 66 %   | 33 %  |

FIG. 1



CONCLUSION

It was stated in the beginning that frac- tures of the neck of the femur have been called the unsolved fracture. In view of our present knowledge, perhaps the designation should be changed to the partially solved fracture.

**Surgery of the Hand**—In summary, it should be noted that injuries to the hand, severe and mild, often result in an economic disaster for the patient; and that this disaster may be diminished by adequate definitive care following the acci- dent and, in some instances, by secondary opera- tive procedures at a later date. The injured hand demands the same care as any other major wound. Adequate facilities, consisting of an oper- ating room, proper instruments, and an anes- thetist, should be available. The specific surgical techniques employed are necessarily dependent upon the skill and the experience of the sur- geon, but the following procedures must not be performed: (1) Both long flexor tendons should not be repaired in the distal palm or in the volar tunnels of the digits. Either the profundus alone is sutured or a primary tendon graft is performed. (2) The wound is not drained. It is closed pri- marily or packed open. (3) Catgut is never used for suture of tendon to tendon. Suture material should consist of either silk or stainless steel wire. (4) The skin edges are not approximated under tension. Skin grafting is used whenever neces- sary for primary closure of a clean wound. (5) Caustic antiseptics are not used to produce fur- ther destruction of tissues. Soap and water or detergents are used for skin preparation. (6) Postoperative bleeding or excessive swelling must not occur. Hemostasis should be complete and the extremity elevated postoperatively. (7) Immobilization is not continued indefinitely, but is sufficient to permit healing. Mobilization, once begun, is pursued by both the patient and the surgeon very assiduously until all function possi- ble has been restored.—Jones, J. Arkansas Med. Soc., July '52.



**Poliomyelitis**—Poliomyelitis is a highly prevalent viral infection of which only a small portion of cases are clinically identifiable. Epidemics of poliomyelitis usually occur during the warm months but sporadic cases may occur throughout the year. The virus known to cause this condition usually attacks the anterior horn cells of the spinal cord and the motor nuclei of the brain, although other parts of the nervous system and other systems may also be affected. Careful sectioning of autopsy specimens in man have also shown involvement of the precentral gyrus of the motor cortex and severe lesions of the reticular formation of the medulla. Frequently involved are: (1) the red nuclei; (2) the substantia nigra; (3) the olivary nucleus; (4) the roof nuclei of the cerebellum; (5) the vestibular nuclei; (6) the internuclear neurones of spinal cord and (7) the proprioceptive cells of the posterior ganglion. Opinion differs in regard as to how the virus enters the body. It was formerly believed that the nasal mucosa was the pathway through which the virus reached the central nervous system. Recently the tendency has been to consider the portal of entry may be in the alimentary tract, particularly the pharynx and the intestinal mucosa. There is no practical test by which the susceptible individual may be distinguished from the person who is immune. A previous attack of the disease, even if it has been so mild that it has not been recognized, usually confers immunity, although there are recorded cases of a second attack.

Although the portal of invasion is not clearly determined it seems fairly certain that the virus travels along peripheral nerves to the central nervous system and then spreads by neuronal pathways to the motor cells which are located in the anterior horn cells of the spinal cord. The skeletal muscles of the trunk, arms and legs are enervated by these motor cells and injury to them will resolve in weakness or paralysis of the muscles which they control. Although the muscle fibers themselves are not damaged by the virus, destruction of the nerve cells renders them useless. Nerve cells can not regenerate and once destroyed are gone forever. What happens when nerve cells are only temporarily damaged is not so well understood. It is thought that transitory loss of function of the nerve cells may be due to inflammation in surrounding tissues. The resultant edema may block the nerve impulse to the muscle and if this has occurred the recovery of the muscle function may result when the inflammation and swelling subside. Occasionally the blood supply to the nerve cells may be partly shut off by the blockage of the minute vessels which supply them or by hemorrhages into the surrounding tissues. In such cases recovery may be slow but can be expected to occur when the cause of the anemia of the nerve cells is no longer present. Fortunately, complete destruction of all anterior horn cells rarely occurs. In most instances there is a patchy distribution of the damaged cells resulting in weakness or paresis rather than in paralysis. Furthermore, whatever damage is done to the cells occurs during the acute stage. The condition is not progressive and there is no danger of relapse.—*Caniglia, Arizona Med., June '52.*

**Treatment of Ulcerative Colitis**—The medical treatment of the acute toxic cases is the most difficult, and since treatment of other types of the disease is similar but somewhat less intense, we will outline the treatment of the toxic case.

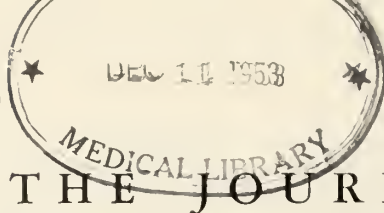
The fundamentals of treatment are rest and food. Rest should include complete mental, emotional, and physical relaxation. The question of psychosomatic treatment is pertinent. While the psychosomatic aspects of this disease are well recognized, most psychiatrists agree that intensive psychiatric treatment or psychoanalysis is not indicated. A psychiatrist probing into the inner aspects of a patient's personality may precipitate an acute flare-up. Most psychiatrists who understand and have worked with ulcerative colitis patients agree that the best psychiatric treatment is considerate and gentle care by the patient's own doctor. A general practitioner is better able to administer this type of therapy than a psychiatrist.

It is imperative that these patients receive a high protein, high carbohydrate, high caloric, low residue diet. Many have lost weight and are in a poor nutritional condition. There is unsatisfactory absorption in the small bowel due to rapid gastrointestinal motility and edema. These patients lose protein with diarrhea, and with the pus, blood, and mucus evacuated in the stools, and are in negative nitrogen balance. Studies have shown that patients with chronic dysentery have liver damage and evidence of impaired liver function. For these reasons the caloric intake must be much greater than the intake which will be required by normal individuals.

If the patient is unable to eat, parenteral fluids must be given. Glucose and amino acids may be required. It frequently is difficult to give sufficient calories parenterally, as 2,000 to 3,000 cc. of 10 per cent glucose intravenously daily is inadequate. The daily caloric intake should be elevated to 3,500 calories. For this reason, we frequently pass a Levin tube to the stomach or a Miller-Abbott tube to the duodenum, and give the patients a continuous drip of egg-nog solutions (to which can be added protein and carbohydrate supplements, amino acid drip, etc.). If the patient is able to eat, his diet is raised to 3,500 calories with 150 Gm. of protein. He takes additional feedings such as egg-nogs, puddings, or supplementary proteins two hours after each meal. Adequate intake may be difficult to achieve, and stimulation of the appetite with small doses of insulin before meals may help.

It is important to rest the colon, and relaxation on the patient's part is helpful. We usually use phenobarbital to help these patients relax. Antispasmodics such as atropine and belladonna are given as well. Banthine has been used, but this drug has a more pronounced effect on the upper than the lower gastrointestinal tract. Paregoric is prescribed for short intervals only for severe diarrhea.—*Brown and Crile, GP, July '52.*





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## HEAT SENSITIVITY DUE TO AUTONOMIC DRUGS

"Sweating is the essential mechanism by which the human body protects itself against the injurious effects of severely elevated environmental temperatures. The experience of the armed forces has shown that in desert and tropical climates a decrease in the ability to sweat is associated with a syndrome of weakness, lassitude, and increased heat sensitivity. Under such conditions a complete failure of sweating is followed inevitably by hyperpyrexia, which may be fatal. In many American cities heat stroke becomes an important problem during prolonged midsummer heat waves. Almost all patients admitted to city hospitals because of hyperpyrexia give a history of a sudden cessation of sweating immediately preceding their collapse. Apparently the essential feature of heat stroke is an acute derangement of the sweating mechanism. Authorities agree that any disease of the central nervous system gravely increases susceptibility to heat pyrexia. Such predisposing factors as extremes of age, alcoholism, and chronic neurological disorders have long been recognized. It seems likely that drugs that tend to inhibit sweating also increase sensitivity to heat. This was pointed out in 1920 by Wilcox, who warned against the use of atropine by military personnel stationed in the Middle East, because of its anhidrotic action. For years atropine and related alkaloids have been used to ameliorate the symptoms of Parkinsonism. During one therapeutic phase, now past, the dosage of these potent drugs was pushed higher and higher (sometimes to 50 mg. of atropine daily), so that maximal benefit might be obtained. Under such circumstances hyperpyrexia would develop in whole wards of patients simultaneously in hot weather. Reports of large numbers of patients treated with mixtures of belladonna alkaloids, even in moderate doses, often include a reference to severe or fatal cases of heat stroke complicating therapy. Attempts have been made to discover drugs that duplicate the favorable antispasmodic action of atropine without the distressing side effects, such as inhibition of secretions. Two preparations that have been recommended as therapeutically beneficial with minimal side effects are 3-(piperidyl)-1-phenyl-1-cycloheptyl-1 propanol (Artane) hydrochloride, a synthetic antispasmodic, and diphenhydramine (Benadryl) hydro-

chloride, an antihistaminic drug. I wish to report observations on the effect of these drugs on sweating in patients afflicted with Parkinsonism, as compared to the effect of Rabellon, a mixture of belladonna alkaloids."

Thus does Litman<sup>1</sup> begin his inquiry into this important but little studied entity.

The author goes on to tell us that "Sweating was induced in the patients by heating them under electric bakers according to the method of List and Peet. Moisture was rendered clearly visible by the starch iodine method of Minor, and the rate and amount of sweating were carefully recorded."

He had under observation nineteen patients, all ambulatory and all males and all suffering from Parkinson's disease. Findings based upon so small a series cannot be accepted too hastily, but Litman's results and conclusions are interesting and provocative. He tells us that "both Artane and diphenhydramine tended to inhibit sweating, although the action was less marked than that of Rabellon." He also states that "The mechanism of the antisecretory activity is by no means clear, even with respect to atropine, a drug that has been studied extensively." And he warns that decreased sweating may result from the action of tetra-ethyl ammonium (Etamon) chloride, Banthine, and Priscoline. The Los Angeles investigator also warns that various other antispasmodics and possibly several of the antihistaminics may have the same anhidrotic action.

And, finally, we read that "Drugs that tend to inhibit sweating should be dispensed with care during hot weather. This warning applies especially to patients with disease of the central nervous system, the aged, alcoholics, and the chronically ill. It also applies to ambulatory persons who may have to do heavy work in a hot climate. Further, the anhidrotic effect of atropine-like drugs is greatest in persons in whom there already exists some derangement of sweating.

"Under circumstances of elevated environmental temperatures, sweating protects the body against hyperthermia. Many recently developed drugs tend to inhibit sweating. Such antispasmodic and anti-

histaminic preparations should be used with caution in patients exposed to extremes of heat; otherwise heat stroke may result."

Litman has done well to discuss a subject of which we know too little and also a subject upon which insufficient study and research have been done. It is to be hoped that his results and conclusions will be duly considered by others, both clinicians and research personnel. Meanwhile, at least until much more is known, practitioners will do well to heed Litman's warnings.

SOMETHING TO VOTE ABOUT

American citizenship may be acquired in the delivery room or the courtroom, but it is fully achieved only in the daily realization of those privileges and duties that give man his rightful place in society. Yet when it comes to voting—the keystone of citizenship—Americans in the past have had a tragic apathy.

In 1948 there were approximately 96 million eligible voters in the United States. But in that year, only 49 million—about half of the eligible voters—cast ballots in the Presidential election! And the turnout at the polls has been decreasing!

Such a record in America, where free elections protect the rights and liberties of the individual, is more threatening to our freedom than any threat from abroad.

In recent elections, according to the Saturday Evening Post, the voters in leading countries exercised their right of franchise as follows:

|                     |             |
|---------------------|-------------|
| Belgium .....       | 90 per cent |
| Italy .....         | 89 per cent |
| Great Britain ..... | 82 per cent |
| France .....        | 75 per cent |
| Japan .....         | 70 per cent |
| United States ..... | 51 per cent |

Why are Americans so apathetic? Why do so many of us sit back and "let George do it"? Perhaps it isn't apathy. Perhaps it is basically an unawareness of issues.

Japan had a new-found individual freedom when 70 per cent of its voters cast their ballots. France and Belgium had just dropped the Nazi yoke. England turned to Churchill after years of Socialist rule. Italy arose against Communist infiltration. People in those Nations really had something to vote about.

Americans have something to vote about, too. Daily the issues are growing more

1. Litman, Robert E.: Heat Sensitivity Due to Autonomic Drugs, J. A. M. A. 149: 635 (June 14) 1952.





clearly defined. The world needs a strong, sure America—and only Americans can keep our Nation strong.

Our role is clear. Whatever path we want America to take, we citizens at the grass roots must make the choice. We must study the issues. We must decide. We must vote. And as good citizens, we must do everything in our power to see that others register and vote, too—because today we Americans, of all peoples of the world, have something vital to vote about!

#### GULF COAST CLINICAL SOCIETY

The 12th Annual Meeting of the Gulf Coast Clinical Society is to be held at the San Carlos Hotel in Pensacola, Florida, on Thursday and Friday, October 16th and 17th of this year. As in the past many nationally famous men will speak on the program. Dr. Charles W. Mayo of the Mayo Clinic, Dr. Charles P. Bailey, the famous cardiac sur-

geon from Philadelphia, and Dr. Keith S. Grimson from Duke will be among them. Others will be announced later.

Anyone wishing further information about this meeting should contact Dr. Dale E. York, Secretary-Treasurer, 21½ E. Wright St., Pensacola, Florida; Dr. A. L. Stebbins, President, Pensacola, Florida; Dr. John N. Lockhart, Pascagoula, Mississippi; or Dr. G. O. Segrest, 1217 Government St., Mobile.

#### OBSTETRIC SEMINAR

Obstetric Seminar sponsored by the Maternal Welfare Committee of the Florida Medical Association and the Bureau of Maternal and Child Health of the Florida State Board of Health will be held September 8, 9 and 10 at the Sheraton Plaza Hotel, Daytona Beach. Members of the profession in Alabama are invited to attend.

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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#### THAT TIME AGAIN

**W. A. Dozier, Jr.**

**Director of Public Relations**

At the time of this writing the Republican convention has just closed. By the time this article is printed the Democrats will have met, nominated candidates, and formulated a platform. This is, then, the season for America's two greatest circuses, not to mention all the smaller ones that will follow between now and November. Some people object to calling the conventions circuses; but anyone who has seen one, either by actually being on the scene or by television, cannot deny that a political convention outstrips Barnum and Bailey ten to one.

Despite all the show, the bands, the oratory, the tempers, and the horse trading, there comes from a convention a most important document. For a time disregard the fact that a standard bearer must be chosen who can get the votes and consider the fact that this candidate must have some platform on which to base his campaign. Far too often people vote blindly for a candidate or for a party without ever bothering to in-

form themselves on what the man and his party are proposing.

During the past four years quite a number of articles have appeared in this section of the Journal, and many of these have dealt with political matters. Appeals have been made to you to assume your responsibilities, and many times the matter under consideration has been of relatively small proportion. In the newspapers, magazines, and journals each of you has read where someone called 1952 a year of decision, this being done for several reasons. In fact this column has carried such a statement. Because of the reasons you have seen listed in one place or another, this is a decisive time in our history; and because of this fact a few things need reiterating.

First and foremost, we who live in the United States have a privilege granted us, a privilege that really becomes a duty. That duty is to vote. An earlier article explored the matter of whether it is a right or a privilege; and no matter which you consider it, there can be few who would not agree that you have a duty to perform. Your duty to your country, your state, your town, and



yourself should take you to the polls in November. There is not a single one of you who cannot take the time and expend the energy to vote.

An earlier statement should again be made. You have an obligation to inform yourself before you cast your ballot. Both political parties will draw up their platforms, and it is your responsibility to study both before making a decision. To some people many of the get-out-the-vote campaigns that have been instituted failed to put proper emphasis on the fact that this country needs informed voters. Just to have a large group of people voting seems to lend itself to easy corruption unless those people are informed on what they are voting for and for what the candidate and his party stand.

One other bit of blind voting should be

mentioned. On occasion one thinks the South holds a monopoly on this type, i. e., voting a certain party ticket no matter what the situation. Those who have lived in other sections will assure you that such is true elsewhere, too. There is no need to go further into the matter of voting for one party because father and grandfather did other than to say that you are not living in grandfather's day. Situations, people, and platforms change. You must recognize those changes and vote according to your own beliefs.

So, once more it is that time again. You have a duty to perform, and it should be performed only after you are informed. How you vote is immaterial to this writer so long as you vote according to your convictions which are founded on the best possible information.

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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

#### TAKE TETANUS SERIOUSLY

Soon after the battle of Antietam, in the War Between the States, Army surgeons treating Federal troops were surprised by a sharp upturn in tetanus cases. Although not a major disease problem during that war, this disease caused plenty of trouble. Much of it would have been avoided if the medical men of the war period had known anything like as much about it as the average doctor knows today.

"Tetanus then was attributed to many causes," George Worthington Adams wrote in his book *Doctors In Blue*. He listed some of them as "exposure to excessive heat or cold, night air and drafts; neglect of thorough and early cleansing of a wound; pressure upon nerves by missiles, bone splinters or bandages; or injuries to nerves while the surgeon probed or operated." Such a list, based upon pure speculation and ignorance, sounds fantastic to modern-day doctors. But, for that matter, so do many other medical ideas of that era.

But one important fact was revealed concerning that tetanus outbreak after the bat-

tle of Antietam. The field hospital where it sprang up so suddenly had formerly been used as a stable. Actually, the floor had been coated to a depth of about two feet with stable manure.

With our modern knowledge of this disease, we can see a natural and logical relationship between that manure-floored stable and that outbreak of tetanus. For the body discharges of certain animals are the main agencies for its spread. And manure-contaminated soil is particularly dangerous from this point of view.

Tetanus has this in common with a number of other forms of illness: It is a germ disease. The germ, or bacillus, that acts as a link between old cases and new ones is found in human intestines, as well as those of certain animals. But animals' intestines seem to be particularly suited to their propagation. That is especially true of the friendly, useful horse. If the horse could be entirely eliminated from the tetanus picture, then the problem would be a relatively minor one.

As long as those germs remain in a horse's intestines, they are harmless. They do not appear to affect its health in any way. And of course, while they are there, they cannot do any damage to humans. But the story is

quite different after they are discharged in the animal's excreta, or body wastes, as was done in that stable near Antietam. For, as was strikingly demonstrated then and there, they dangerously infect the soil into which they are discharged. And, unfortunately for us humans who may come into contact with that soil, they have a remarkable power of survival. There are, it is true, certain conditions which destroy their ability to do harm. But it is unsafe to depend upon those natural enemies of their survival. It is best to assume that any soil which has been polluted with animal discharges is dangerous. If we do so, we are more likely to remain aware of its dangerous potentialities. And, in that case, we are more likely to avoid the disease.

This tetanus bacillus we are considering is an unusual organism. It has characteristics peculiar to itself. None other in the whole field of bacteriology is like it in some important respects.

For one thing, it forms a spore. In everyday language, that means that, after it becomes embedded in that soil, it creates a reproductive element which gives it its peculiar shape, roughly resembling that of a drumstick. In the soil, this bacillus also develops a strong resistance to dryness, which means it is not adversely affected by it. At the same time, it also becomes strongly resistant to extremes of cold and heat. Those peculiarities naturally tend to give it a much greater chance of survival. They also, by the same token, make it dangerous over a longer period of time. The chief enemy of its survival is extreme sunlight. If all the tetanus bacilli could be exposed to that, they would become relatively harmless. But, unfortunately, there is not much chance for sunlight to get at their destructive work beneath the soil.

The tetanus bacillus has another peculiarity that affects its power to harm us humans. It cannot grow and develop in the presence of oxygen. That is why the tetanus danger is so much greater from what are known as stab wounds than from others. Stab wounds tend to seal themselves, letting in very little air. Thus they produce the very conditions which are most favorable to the development and growth of tetanus germs. (While the tetanus danger cannot be entirely ruled out when you get other kinds of wounds, such as cutting your hand with a

piece of broken glass, the danger in such injuries is much less.)

The tetanus bacillus, too, has a strong affinity for dead and decaying tissues. And of course wound tissues are that kind.

Still another peculiarity of the tetanus bacillus is its method of attack. That differs markedly, for instance, from the method used by the typhoid bacillus, the viruses and germs responsible for whooping cough, pneumonia, influenza, poliomyelitis, and the venereal diseases. Those other disease organisms which have been mentioned make direct attacks upon certain parts of the human body. Tubercle bacilli usually go to work trying to break down lung tissue, for example. Typhoid germs directly attack the intestines. And so on. But not tetanus bacilli. Their method is indirect. They generate a powerful toxin, or poison. This is what causes the characteristic symptoms of the disease.

Do not think, however, that the indirect attack is the less dangerous attack. That does not necessarily follow. As a matter of fact, the attack which tetanus bacilli make upon the human body, indirect though it is, is dangerously strong, as any former tetanus victim knows from sad experience. Medical authorities tell us that, volume for volume, tetanus-created toxin is many times stronger than strychnine. And strychnine, as you do not need to be told, is a powerfully strong drug.

Tetanus bacilli are extremely active. Going first to the nerve tissues, they move on to the brain and spinal cord. The nerve cells thus attacked are violently stimulated. That is what causes those frightening spasms which have become associated in most people's minds with the disease. Anyone who has ever seen one of them is not likely to forget it as long as he lives.

The author of *Doctors In Blue* tells us that tetanus in the War Between the States had a mortality rate of 89 per cent. He attributed this high rate in large part to Army doctors' lack of familiarity with it. "As there had been little or none of it in the Mexican War," he wrote, "American surgeons were unfamiliar with it and generally tried experimental treatments when it appeared."

Armed with the benefits of medical progress made since that conflict, we have considerably less to fear from tetanus than



those Union soldiers had. (We do not have any reports at hand on the prevalence or mortality of the disease among Southern troops.) It is still a dangerous form of illness, of course. Indeed it still ranks among the most fatal ones. But the chance of surviving, once the average person gets it, is considerably more promising than it used to be. The mortality rate is now said to be slightly less than 50 per cent. In other words, the average tetanus victim has about a 50-50 chance of getting well. His outlook, therefore, is substantially less hopeful than that of the average tuberculosis patient, the average victim of poliomyelitis, the average person who gets pneumonia, or the average typhoid patient.

We are much better off from the tetanus point of view in one respect than those Union soldiers fighting the War Between the States. For we—the average layman—know much more about preventing tetanus than even the most distinguished doctor knew then. Guided by that knowledge, we can do something about protecting ourselves against it.

In the first place, we know what we need to do to avoid it. We know we should walk with particular care around barns, in plowed fields, and in other places where the soil is likely to contain animal body discharges. We can be careful when around places where rusty nails are lying about. We can remember to handle with particular care all instruments likely to produce stab wounds—things like ice picks, spike files, and other sharp-pointed articles capable of being plunged deep inside the flesh in a moment of carelessness.

Thanks to an important advance in medical science, the human body can also be protected against the effects of a tetanus germ invasion. One form of protection is used to give the body general and fairly long-lasting protection. The other is used after a person has received a stab wound or done something else which admitted the germs into his body.

General immunity of a limited degree is provided in much the same way that immunity is provided to diphtheria, typhoid or smallpox. A person takes a "shot" from time to time, just as he periodically takes typhoid "shots." In Alabama, the product giving this form of protection is provided free by the State Health Department's Bureau of Laboratories, along with protection

against diphtheria and whooping cough. This three-disease protection is afforded by what is known as triple antigen. It is intended primarily for children, who are especially susceptible to those other forms of illness. Adults may obtain it by means of regular tetanus toxoid. In either case, "booster shots" should be taken at intervals of about a year, although the protection usually lasts longer than that.

It should also be remembered that the protection afforded in this way—whether to a child by triple antigen or to an adult by regular tetanus toxoid—is not complete. You cannot depend upon it, for example, to the same extent that you can depend upon typhoid vaccine. For the protection thus furnished, while considerable, is insufficient. As soon as you step on a rusty nail or do something else that, you have good reason to think, has admitted tetanus germs into your body, take a "booster shot" immediately. That should bring your immunity up to the point where it will prevent tetanus from developing. You should of course be under the care of a physician. And you should follow his advice conscientiously.

But many people—far too many—do not give themselves this long-range protection. Fortunately, their lack of foresight need not cost them too dearly. But they will need much more than a "booster shot" when they receive tetanus germs into their bodies. They must use tetanus antitoxin. It provides defensive antibodies which go to work fighting the toxins caused by the infection. Remember that time is of the essence. Tetanus antitoxin must be administered as soon as possible after infection occurs. It is particularly urgent that this defensive mechanism be set up before those toxins have established themselves in the nerve tissues.

Tetanus antitoxin, unlike triple antigen and tetanus toxoid, is not furnished free. But it is sold at cost. When either is administered by a private physician, he may be expected to make a charge for his services in doing so.

It may be as short a time as 24 hours and as long as 20 days between infection and development of the disease. Usually, the case that develops fairly quickly is more likely to be severe than one that takes longer to do so. One of the purposes of tetanus antitoxin is to lengthen that interval between infection and illness.

Tetanus may begin mildly enough. Its first symptom may be insomnia. The vic-



tim may have a headache. Or he may be unaccountably irritable. Or the first symptom may be difficulty in swallowing, or pain in the abdomen or slight stiffness in the neck region. Chewing may be difficult. The corners of the mouth have a tendency to turn down and backward. Later the jaws, no longer merely stiff, become set and rigid. Swallowing may be impossible. As time goes on muscles in other parts of the body may become involved, affecting the functioning of those areas.

We should be thankful that we and our doctors know so much more about tetanus than those tetanus patients after the battle of Antietam and their doctors did. We should be thankful too for the development of those powerful protective agencies that have been mentioned. But all that knowledge and all those fruits of research need to be used. It is up to us to make the most of them.

### BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

#### SPECIMENS EXAMINED

May 1952

|   |        |
|---|--------|
| Examinations for diphtheria bacilli and Vincent's .....         | 101    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 1,120  |
| Brucella cultures .....   | 15     |
| Typhoid cultures (blood, feces, and urine) .....                | 685    |
| Examinations for malaria .....                                  | 300    |
| Examinations for intestinal parasites .....                     | 3,975  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 47,506 |
| Darkfield examinations .....                                    | 5      |
| Examinations for gonococci .....                                | 1,742  |
| Examinations for tubercle bacilli .....                         | 3,217  |
| Examinations for meningococci .....                             | 1      |
| Examinations for Negri bodies (microscopic) .....               | 132    |
| Water examinations .....  | 1,844  |
| Milk and dairy products examinations .....                      | 4,067  |
| Miscellaneous .....   | 1,469  |
| Total .....   | 66,179 |

Since the principal aim of mass chest x-ray surveys is to find significant tuberculosis in the screened population, the question of how much active tuberculosis is found is fundamental. Although reporting by private physicians has not been complete, or diagnostic methods and criteria uniform, the information we have assembled indicates that about one out of every 1,000 persons screened will have active tuberculosis that is clinically recognizable. Our experience indicates, too, that many of those found with inactive and questionably active disease will later prove to have definitely active tuberculosis.—Anderson, J. A. M. A., Feb. 23, '52.

### BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

#### CURRENT MORBIDITY STATISTICS

1952

|                               | Apr. | May  | E. E.*<br>May |
|-------------------------------|------|------|---------------|
| Typhoid and paratyphoid ..... | 3    | 4    | 6             |
| Undulant fever .....          | 4    | 1    | 2             |
| Meningitis .....              | 6    | 16   | 11            |
| Scarlet fever .....           | 18   | 28   | 33            |
| Whooping cough .....          | 97   | 64   | 191           |
| Diphtheria .....              | 15   | 4    | 15            |
| Tetanus .....                 | 1    | 5    | 4             |
| Tuberculosis .....            | 219  | 284  | 263           |
| Tularemia .....               | 3    | 2    | 1             |
| Amebic dysentery .....        | 2    | 2    | 1             |
| Malaria .....                 | 1    | 5    | 65            |
| Influenza .....               | 2280 | 362  | 232           |
| Smallpox .....                | 0    | 0    | 0             |
| Measles .....                 | 2717 | 1963 | 895           |
| Poliomyelitis .....           | 1    | 1    | 4             |
| Encephalitis .....            | 3    | 5    | 1             |
| Chickenpox .....              | 294  | 281  | 174           |
| Typhus fever .....            | 3    | 0    | 0             |
| Mumps .....                   | 417  | 320  | 168           |
| Cancer .....                  | 326  | 489  | 262           |
| Pellagra .....                | 3    | 1    | 2             |
| Pneumonia .....               | 304  | 349  | 197           |
| Syphilis .....                | 175  | 331  | 1481          |
| Chancroid .....               | 6    | 8    | 16            |
| Gonorrhea .....               | 265  | 385  | 607           |
| Rabies—Human cases .....      | 0    | 0    | 0             |
| Positive animal heads .....   | 33   | 47   | 0             |

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

### BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

#### PRESEASON PREPARATION OF SWIMMING POOLS

Contributed by  
Lauris T. Jones  
Ass't. San. Engineer

In the interest of more efficient and sanitary operation resulting from economy in the use of swimming pool plant and equipment, the following suggestions are offered regarding preseason preparation of swimming pools. These steps should be taken prior to opening the pool to the public each spring.

#### BATH HOUSE FACILITIES

Good housekeeping in the bathhouse will result in a clean attractive appearance which will greatly influence the customer's impression of the pool as a whole.

In the preseason preparation the walls and ceiling of the bathhouse should be thoroughly cleaned, and the bathhouse painted both inside and out, if indicated.

Floors and benches should be thoroughly cleaned with soap and hot water, followed by disinfection by the use of chlorine, cresol, or lye solutions. This cleaning and sterilizing of floors is an essential daily operation during the swimming season, if athlete's foot and disagreeable odors are to be kept to a minimum.

Foot baths have been used in the past in an effort to control athlete's foot. Their effectiveness for this purpose has proved unsatisfactory in many cases because the solution used was not a good fungicide and the time of contact was too short. When the foot bath was neglected, it became a source of infection rather than preventing the disease. The present trend is to eliminate the foot bath, or convert it to the flow through type, with a constant supply of fresh water and disinfectant being added. Care should be taken that the fresh water inlet is at least six inches above the rim of the foot bath, in order to prevent the possibility of a cross-connection.

All lockers and check baskets should be cleaned daily and disinfected periodically. If towels and bathing suits are to be furnished, an ample supply should be made ready for the season, and provisions made for cleaning and sterilizing these after each use.

If a soft drink and food concession is to be maintained, provisions should be made to prevent the products from being carried into the pool enclosure, which will result in an unsightly littered condition around the pool, and an unnecessary load on the filtering equipment. This may be accomplished by keeping this concession in the outer lobby of the bathhouse.

Swimmers should not be allowed in the pool until they have had a thorough cleaning with warm water and soap. Showers provided at the only public entrances to the pool from the bathhouse encourage this practice. Spectators in street clothing should not be allowed in the pool enclosure. Man-proof fences should be installed with entrances only through the bathhouse.

All plumbing fixtures and piping should be checked for stoppages and ruptures which might have occurred during the off-season. Lavatories, urinals, and toilets should be cleaned and disinfected before starting operations, and at least daily thereafter.

#### POOL PROPER

One of the outstanding assets of any pool is clear sparkling water. This can be promoted by maintaining a smooth, light-colored surface on the walls and bottom of the pool. A smooth surface further inhibits the growth of algae which will discolor the water and possibly give the water a dis-

agreeable odor. If an algal growth has resulted from the pool being left filled during the off-season, this can be eliminated by maintaining a chlorine residual of 10 p. p. m. in the filled pool for a short time, possibly over night. This should be done only prior to opening and should be reduced to 1.0 p. p. m. before bathers are allowed in the pool. Further growths of algae during the operating season can be inhibited by maintaining the recommended chlorine residual of 0.4 to 0.75 p. p. m. of chlorine at all times, and by dosing periodically with copper sulfate at the rate of 10 pounds per million gallons of water.

Indoor pools are usually tiled and require no painting. Outdoor pools of smooth, light colored concrete may not be painted. If the pool surfaces are of dark concrete, or if the existing paint is peeling, or stained excessively, painting is recommended. The most satisfactory colors are white, light blue, or light green.

Three types of paint have been used at pools:

1. Cement-water paint. This paint is cheapest, but cannot be expected to last more than one season.

2. Enamel, with water resisting varnish. This paint has not proved satisfactory due to lack of durability and peeling.

3. Waterproof enamel paint (having a chlorinated, rubber base). This paint gives the best overall results. It is necessary to remove the old paint in order to produce a satisfactory bond.

Careful attention should be given pool accessories such as towers, slides, and diving boards, to insure a smooth, safe surface and a protective finish. Diving boards should be examined and have a fresh surface treatment and new cocoa matting if needed. Underwater lights should be checked for any cracked or broken lenses, and one or two extra lamp globes for these lights should be kept on hand.

Before starting the filters, a careful check should be made of pool inlet and outlet line to assure the proper circulation of water through the pool, and to be sure that no possible cross-connections have occurred between the pool facilities and water supply or sewage lines.

#### FILTRATION AND DISINFECTION EQUIPMENT

All piping, fittings, and fixtures should be checked for stoppage and leaks, and any part found defective should be repaired or replaced. After the piping has been put



into good operating condition, the rapid sand filters should be back washed until completely clean. After draining, the manhole on top of the filter should be removed, and the filter material allowed to dry before carefully examining it. The first two inches of the sand should be passed through a one-sixteenth inch mesh sieve to remove existing mud balls. In the case of diatomite filters, careful attention should be given the filter elements, tank proper, gages, and valves. The filter elements should be closely examined for fractures and eroded or broken wires. The tank proper should be clean, and free from rust spots and leaks. The gages and valves should be free of rust and dirt and in good working condition. For more specific instructions and assistance it is suggested that the manufacturer of the filters be contacted as there are many designs and types of diatomite filters.

Chlorination equipment should be very closely checked before it is placed in operation. Any protective coating should be removed. All gaskets, valves and fittings should be checked for leaks and deterioration. All faulty or suspicious parts should be repaired or replaced. Special attention should be given rubber or plastic parts for deterioration. After the chlorinating equipment has been put into good operating condition it is suggested that a strong solution of 5 p. p. m. be circulated into all piping and the pool proper and be maintained for a period of two hours or more in order to give these parts complete initial sterilization prior to admitting swimmers.

The chlorinating equipment should be located in a room separate from other equipment and be adequately ventilated. If liquid chlorine is used, the cylinders should be stored in a cool dry place. The cylinder in use should be well anchored to the wall or floor, and away from sunlight. A gas mask should be available for emergency use. Accurate scales should be provided for the purpose of determining the daily rate of use of chlorine. All chlorine, pH, and other chemical testing equipment should be checked for good operating condition, and an ample supply of chemical reagents provided.

A close check should be made to preclude the possibility of cross-connections between the pool water supply and the public supply or with the sewerage system. A surge tank equipped with float valves should be provided to prevent a cross-connection between

a public water supply and the filtering system. There should be an air gap equal to twice the diameter of the inlet pipe between the inlet pipe and the top of the surge tank. There should be no direct connection between the swimming pool outlet and a sanitary sewer.

The lint strainer should be checked and a clean strainer bucket installed. This strainer should be cleaned when required, and at least weekly while in operation, to prevent undue loss of head.

The filtering and disinfecting system should be placed in operation and observed over a period of at least eight hours before the pool is opened to the public in order to find any malfunction not observed in the initial check. During this period the valves and gages should be calibrated for the recommended rate of filtration of two gallons per minute per square foot. Calibration of the chlorinating equipment should be done in order to maintain the recommended residual of 0.40 to 0.75 p. p. m. more easily. All other chemical feeding devices should be checked and calibrated likewise.

#### PERSONNEL

The proper operation of a swimming pool is a complex problem, usually requiring the services of a number of persons in various capacities. Their selection and salary should be considered accordingly. Untactful, underpaid, disinterested personnel can ruin the best pool in record time.

The recommended staff of a properly operated swimming pool consists of a pool manager, bathhouse attendants, life guards, and water treatment plant operator. However, a staff of this size is not always economically feasible.

A pool manager's time should be devoted solely to the supervision of the other employees, and to his overall responsibility for pool operation. He should not be handicapped by simple, routine duties. He should observe and study all phases of pool operation toward maintaining highest health and safety standards. A pool manager should have a basic knowledge of water-treatment processes at his pool and should know the proper technique in collection of water samples for bacteriologic analysis, and be capable of performing the chemical tests necessary in pool control.

Bathhouse attendants should be tactful and diligent in swimmer inspection, en-

forcement of showers before entering pool, and maintaining a high degree of cleanliness in the locker rooms, showers and toilets.

Life guards should be qualified by American Red Cross or Y. M. C. A. standards. Full-time life guards should be on duty at all times in the ratio of one per 75 swimmers. It is the duty of a life guard not only to safeguard the swimmers but also to maintain order and cleanliness in the pool proper.

A water treatment plant operator should have a good knowledge of the operation of the equipment at his pool. An operator who has had experience in the operation of a surface water supply treatment plant is ideal for this job but may be difficult to obtain. The necessary training may be obtained through representatives of the equipment manufacturer or design engineer. A good operator should continuously study his plant looking to more efficient operation of his equipment.

In case of difficulty in any phase of operation, the pool manager should not hesitate to call on the Bureau of Sanitation of the State Health Department for advice and assistance.

**Black Widow Spider Bite**—Local treatment of incision and suction has been tried by some authors, but this procedure is generally of no value as the toxin is very rapidly absorbed. Hartinger reported good results using locally gauze saturated with 5% solution of gold chloride. Some mention using iodine and ichthylol locally.

Prognosis is favorable, considering the high toxicity of the venom, but there are reports giving a mortality rate of two to three per cent. In our five cases there was one death, but here the diagnosis was questionable. Factors affecting the prognosis are age, health, and location of the bite. Alcoholics and syphilitics appear to experience more serious consequences than healthy human beings.

Immunity, according to D'Amour, is acquired slowly after repeated injections of the venom. Several bites in one individual, with diminishing reaction of arachnidism, are recorded.

Protective measures include fine mesh screenings to keep out insects. Use mosquito netting when sleeping outdoors. Inspection of sleeping bag and clothes may be considered as a valuable prophylactic measure. Spraying with crude oil alone, or with a mixture of creosote will destroy the spider. Powdered unslaked lime and kerosene will kill the adult spider in about thirty minutes. All webs, spiderlings, and eggs should be destroyed by careful spraying or burning. It is very important to spray outdoor privies thoroughly and to inspect them before using again. Outdoor privies are considered one of the most common places of black widow spider infestation.—*Vileisis, Delaware State M. J., June '52.*

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

## PROVISIONAL BIRTH AND DEATH STATISTICS FOR MARCH 1952, AND COMPARATIVE RATES

| Live Births,<br>Stillbirths, Infant<br>Deaths and Causes<br>of Death             | Number<br>Registered<br>During<br>March 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|--|--|-------|---------|--------------------------|-------|-------|
|  | Total  | White | Colored | 1952                     | 1951  | 1950  |
| Total live births  | 6724   | **    | **      | 25.3                     | 25.4  | 26.2  |
| Total stillbirths  | 174  | **    | **      | 25.2                     | 32.6  | 25.4  |
| Deaths, stillbirths<br>excluded  | 2508   | 1452  | 1056    | 9.4                      | 9.7   | 9.4   |
| Infant deaths:   |  |       |         |                          |       |       |
| under one year   | 268  | 114   | 154     | 39.9                     | 41.9  | 42.2  |
| under one month  | 176  | 81    | 95      | 25.5                     | 27.4  | 25.9  |
| Causes of Death  |  |       |         |                          |       |       |
| Tuberculosis, 001-019  | 47   | 24    | 23      | 17.7                     | 29.6  | 35.7  |
| Syphilis, 020-029  | 3  | 1     | 2       | 1.1                      | 3.4   | 8.1   |
| Typhoid and para-<br>typhoid, 040, 041   | 1  | 1     | —       | 0.4                      | —     | —     |
| Dysentery, 045-048   | 1  | 1     | —       | 0.4                      | 0.8   | 1.9   |
| Diphtheria, 055  | 1  | 1     | —       | 0.4                      | 0.4   | 0.4   |
| Whooping cough, 056  | 4  | —     | 4       | 1.5                      | 1.1   | 0.4   |
| Meningococcal infec-<br>tions, 057   | 4  | 2     | 2       | 1.5                      | 1.1   | 1.2   |
| Poliomyelitis, 080, 081  | —  | —     | —       | —                        | 0.4   | —     |
| Encephalitis, 082, 083   | 3  | 2     | 1       | 1.1                      | —     | —     |
| Measles, 085   | 9  | 5     | 4       | 3.4                      | 0.4   | 0.8   |
| Malignant neoplasms,<br>140-205  | 265  | 171   | 94      | 99.7                     | †85.8 | †79.4 |
| Diabetes mellitus, 260   | 23   | 16    | 7       | 8.7                      | 13.7  | 9.6   |
| Pellagra, 281  | 2  | 2     | —       | 0.8                      | 1.5   | 0.8   |
| Vascular lesions of<br>central nervous sys-<br>tem, 330-334                      | 313  | 181   | 132     | 117.8                    | 119.9 | 102.4 |
| Other diseases of nerv-<br>ous system, 300-318,<br>340-398                       | 32   | 15    | 17      | 12.0                     | 12.1  | 15.0  |
| Rheumatic fever,<br>400-402  | 4  | 2     | 2       | 1.5                      | 3.0   | 1.2   |
| Diseases of the heart,<br>410-443  | 748  | 471   | 277     | 281.5                    | 279.3 | 275.1 |
| Diseases of the arte-<br>ries, 450-456   | 58   | 39    | 19      | 21.8                     | 11.8  | 15.0  |
| Other diseases of the<br>circulatory system,<br>444-447, 460-468                 | 36   | 21    | 15      | 13.5                     | 9.5   | 12.7  |
| Influenza, 480-483   | 70   | 38    | 32      | 26.3                     | 26.6  | 23.4  |
| Pneumonia, 490-493   | 133  | 69    | 64      | 50.1                     | 58.4  | 53.7  |
| Bronchitis, 500-502  | 2  | 1     | 1       | 0.8                      | 1.5   | 1.9   |
| Appendicitis, 550-553  | 3  | 3     | —       | 1.1                      | 1.1   | 1.5   |
| Intestinal obstruction<br>and hernia, 560, 561,<br>570                           | 8  | 2     | 6       | 3.0                      | 1.9   | 5.8   |
| Gastro-enteritis and<br>colitis (under 2)<br>571.0, 764                          | 8  | 6     | 2       | 3.0                      | 3.0   | 3.8   |
| Cirrhosis of liver, 581  | 17   | 15    | 2       | 6.4                      | 6.1   | 3.1   |
| Diseases of pregnancy<br>and childbirth,<br>640-689                              | 8  | 6     | 2       | 11.6                     | 17.4  | 8.5   |
| Sepsis of pregnancy<br>and childbirth, 640,<br>641, 645.1, 651, 681,<br>682, 684 | 1  | —     | 1       | 1.4                      | 1.4   | 2.8   |
| Congenital malforma-<br>tions, 750-759   | 30   | 22    | 8       | 4.5                      | 9.1   | 3.2   |
| Accidental deaths,<br>total, 800-962   | 156  | 97    | 59      | 58.7                     | 70.2  | 57.2  |
| Motor vehicle acci-<br>dents, 810-835, 960                                       | 56   | 33    | 23      | 21.1                     | 25.4  | 23.4  |
| All other defined<br>causes  | 397  | 214   | 183     | 149.4                    | 15.2  | 164.6 |
| Ill defined and un-<br>known causes, 780-<br>793, 795                            | 123  | 30    | 93      | 46.3                     | 66.0  | 57.5  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the March report of the years specified.

†Leukemia not included.



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BOOK ABSTRACTS AND REVIEWS

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**A Text-Book of X-Ray Diagnosis.** By S. Cochran Shanks, M. D., Director, X-Ray Diagnostic Department, University College Hospital, London, and Peter Kerley, M. D., Director, X-Ray Department, Westminster Hospital. Volume 1. Second Edition. Cloth. Price, \$12.00. Pp. 434, with 439 illustrations. Philadelphia: W. B. Saunders Company, 1951.

This volume of X-Ray Diagnosis is confined to the head and neck. This is the last of the set of four volumes to be published. The previous volumes have been reviewed in the *Alabama Medical Journal*. The second volume is devoted to the chest, the third volume is devoted to the abdomen, and the fourth volume is devoted to bones.

This book on X-Ray Diagnosis is written by a group of British authors, and since the first edition was published in 1938, has been a very well received reference in this country. This is so because the authors have used both American and Continental references.

The first half of the book covers the central nervous system. The anatomy of the skull is demonstrated by illustrations of roentgenograms along side of which are line drawings so that the radiologic anatomy is clearly visualized. The normal and pathologic features of the cranium are discussed, such as the causes of bone erosion and bone thickenings of the skull; and a discussion of the normal sella turcica and the changes produced in the sella by intracranial tumors.

Ventriculography and encephalography are explained by text and pictures of the brain and the cerebrospinal fluid pathways. Drawings demonstrate the mechanics of ventricular displacement by tumors and expanding lesions. This edition contains a section on the use of cerebral angiography. The arteries and veins of the brain are visualized by the injection of a radio-opaque solution into the common carotid. Variations from the normal cerebral angiogram may be due to aneurisms, tumors, and expanding lesions. The radiologic literature is becoming voluminous as angiography is becoming more widespread in adoption.

However, in common practice we have to first rely upon the radiologic signs on flat plate skull x-rays to diagnose intracranial lesions. Changes in the cranial bones in the tumor itself (calcification) and in the vascular channels are discussed.

Spinal cord lesions (tumors and discs) are described showing bone changes and myelographic findings.

Part two of the volume discusses the teeth and the jaws. Inflammatory diseases, cysts and tumors of the jaws are beautifully illustrated.

Part three discusses the radiology of the eye. This chiefly concerns the localization of foreign bodies.

Part four concerns the radiology of the accessory nasal sinuses. Technique of visualization of sinuses and interpretation of diseases are well described and illustrated.

The book concludes with a part five devoted to the complicated subject of the radiology of the temporal bone. This embraces the diseases of the mastoid, middle ear and inner ear.

This excellent volume completes a set of books on x-ray diagnosis. It contains the usual and some of the unusual conditions. The x-ray plates used for illustration are very good and explicit. There are 2291 illustrations in the four volumes, 876 more than appeared in the first edition. The text gives data on pathology, clinical features and differential diagnosis. Radiation therapy is purposely omitted.

It is a complete reference text of x-ray diagnosis. It belongs near the desk of every radiologist and physician who assumes the responsibility of using x-rays for diagnosis.

Howard J. Goldstein, M. D.

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**1952 Current Therapy.** By 362 American Authorities selected by a Board of 12 Editorial Consultants. Edited by Howard F. Conn, M. D. Cloth. Price, \$11.00. Pp. 849. Philadelphia: W. B. Saunders Company, 1952.

In this volume, and for the fourth consecutive year, the publishers offer to the practicing physician a summary of the latest approved methods of treatment. Good treatment presupposes an accurate diagnosis. This volume is based on the assumption that an accurate diagnosis has been made and that the physician may wish a reference volume for the current therapy. Research programs are producing effective therapeutic agents at a considerably increasing tempo and it is only in such a volume as this that all the current methods of therapy can be presented in detail and without bias.

As in the past years this volume was edited by Howard F. Conn, M. D. who is assisted by a group of twelve consulting editors. This group, in turn, is assisted by one hundred eighty-nine contributors, each of whom is an authority in the field of therapy about which he writes. Every article is an original article written expressly for this volume and at the last possible moment before press time. Once again the editors have accomplished a heroic job in getting the 1952 volume of *Current Therapy* off the press so quickly.

J. M. Barnes, M. D.

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**Principles of Refraction.** By Sylvester Judd Beach, A. B., M. D., F. A. C. S. Consultant Staff, Maine Eye and Ear Infirmary; Chief Ophthalmologist, Portland City Hospital; Member of Staff, Maine General Hospital. Cloth. Price, \$4.00. Pp. 158, illustrated. St. Louis, Mo.: The C. V. Mosby Company, 1952.

In spite of a favorable introduction by the author's now deceased contemporary and friend, Dr. Walter B. Lancaster, it is difficult for me to find any reason for publishing the 58 pages that make up this book since everything included in this brochure is as well documented, and more extensively so, in texts that have preceded this. Again, we are rehashing what has already been said and written many times before with nothing new added.

On the favorable side it may be said that the brochure is most elementary and probably would help a beginner in ophthalmology, optometry or be favorable supplemental reading for medical students interested in refractions. Again, the publishing company is lavish with paper and cover. The final chapter on ocular neurosis is best in that it almost fulfills the daily observations of everyone practicing refraction and wisely emphasizes the need for psychoneurotic diagnosis and treatment as compared to the physical aspects of this science.

In summary, I expected more from the author.

Karl B. Benkwith, M. D.

**Living in Balance.** By Frank S. Caprio, M. D. Cloth. Price, \$3.50. Pp. 246. Washington, D. C.: The Arundel Press, Inc.

All manner of men with all manner of motives and talents have been inspired to take up the challenge of explaining man to himself. This job, once the special preoccupation and responsibility of the philosopher and the religious leader, has been usurped in recent years by the psychologist and psychiatrist. Many of the latter, emboldened by the knowledge and skills of their professions, have presumed all too frequently an associated skill as literary interpreters of the human enigma, attempting to clarify and simplify in books, for popular consumption, the newly acquired understanding of psychodynamics. From such unwarranted presumptions has arisen a large body of literature, for the most part, rendered ineffectual by literary ineptitude or, more frequently, by an inability to maintain a constant depth perception, in the popularization of a complex abstruse science. The result is an unhappy admixture of ridiculously superficial aphorisms and platitudes with involved concepts that escape simplification in a non-technical frame of reference. To this series, which may be classified under the heading, "Down Life's Highway with Couch and Cliche," is added this better than average contribution.

The author attempts to provide insight into the dynamics of many of the common and more readily recognized psychiatric problems to be found in the reader, his family, or his friends. Such chapters as "Who Is A Normal Person," "Neurotics Are Nice People," and "Neurotic Reactions," are very well done. The defects are these of its generic companions—too many concepts that are more indigestible than unpalatable, too many sugar-coated aphorisms more tasty than therapeutic. The reader who is expected to assimilate a chart with its analytic interpretations of dream symbolism, or such terms as "oral erotic" and "nipple complex," is treated to such

low caloric stuff as "Marriage Is A Fifty-Fifty Proposition."

This book is very much a psychiatric "Family Guide to Home Remedies." In that class, it is one of the better examples.

Philip S. Bazar, M. D.

**Anesthesia**—It is certainly not a new thought to suggest that the beginnings of good clinical anesthesia are concerned with the skills of the anesthesiologist. It is also not new to point out that the best anesthesiologist is first a good physician before he is a competent specialist. Since the planning of anesthesia starts with the understanding of the nature of the surgical operation, the anesthesiologist must have a clear picture of the plan of attack of the surgical team in the specific problem at hand.

Secondly, consideration is given to the deviations from normal physiological activity of the patient who is to be subjected to an operation. The anesthesiologist must know as much as can be known about the health and organ function of the patient. He is also responsible for a thorough knowledge of the effects of anesthetic drugs which will be administered.

Before selecting the anesthetic agent or method, much must be learned about the patient himself as a person. This type of information can be gathered not only from the history acquired by the patient's physician or surgeon but by a sensible and searching interview prior to the administration of anesthesia. Frequently a surgical patient is more fearful and more concerned about his anesthetic experience than he is about the operation itself. By the time he is admitted to the hospital, the patient usually accepts the need for the removal of a pathological organ or for the alterations of physiological activity by surgical attack. It is usually within the hospital that he begins to consider seriously what will happen to him in the process of securing pain relief, loss of consciousness or other forms of anesthesia. It has become evident that such disturbing thoughts occur to surgical patients and that a good answer for these anxieties is the provision of information with sympathetic understanding about the anesthetic experience immediately ahead.

It has been poor practice, in our experience, to attempt to deceive the patient with the simple statement that all will be well. Such flamboyant optimism may be satisfactory for some patients, but, by and large, most expect and deserve a more effective and a closer relationship with the anesthesiologist. On the basis, then, of the evaluation of the surgical requirements, the medical situation, and the personality of the patient, it is possible to select a method of anesthesia in most instances that will provide good working conditions for the surgeon, a minimum of harm to the patient, and on the whole a not unpleasant experience for the most important member of the operating team, the patient.—Papper, J. *Michigan M. Soc.*, June '52.

ANNUAL SESSION  
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AMERICAN MEDICAL ASSOCIATION NEWS

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**SAYS IMPROPER FOOTGEAR CAUSES  
PEDAL DERMATITIS**

Much foot dermatitis is caused by the failure of footwear to permit the absorption of thermal and psychogenic sweat, according to Dr. L. Edward Gaul, of Evansville, Ind.

In a statement in the Journal of the American Medical Association, Dr. Gaul said that during the past quarter century there has been a trend to use impervious materials in footwear, thus preventing the evaporation of sweat. As a result, there occurs a train of symptoms and signs on the feet which, today, has been lightly passed off as a touch of fungus infection.

Sweating is a continuous secretion, Dr. Gaul pointed out. However, he said, little attention has been paid to the outflow of psychic or emotional sweat from the palms, soles and under arms. The importance of wearing absorbent sandals and or shoes to allow the sweat to evaporate and the "pedal symptoms and signs to subside" has been demonstrated again and again, he stated, adding:

"I believe it is true that whenever a physiological function is interfered with, we can expect a train of sequelae. The commonest complaint we encounter is that of a patient who states: 'My feet sweat terribly.' This is wrong because it is not their feet, but it is impervious material preventing evaporation.

"Along the same line, parents complain of children continually kicking off their shoes. Children prefer that their feet be comfortable. They complain that their feet are hot.

"Certainly, the ridicule would be great if we were to interfere with the secretion of tears, saliva or bile, to say nothing of the kidneys. The importance of these physiologic principles is recognized, but just as important is the function of psychic sweating.

"It is most interesting to consider how we have violated this physiological principle. Present day efforts are directed at trying to stop it. Thus, we see a fair incidence of axillary dermatitis, and, of course, dwarfing this incidence is that of pedal dermatitis."

**AUREOMYCIN ADDED WEAPON IN  
TREATMENT OF SYPHILIS**

Aureomycin is an additional oral weapon in the treatment of early syphilis, according to findings published in the American Medical Association's Archives of Dermatology and Syphilology.

The conclusion was based on results obtained in the treatment of 101 patients at the Chicago Board of Health's intensive treatment center for venereal disease control. The report was prepared by Drs. Jack Rodriguez, Seymour Weinstein and George E. Parkhurst, under the direction of Dr. Herman N. Bundesen, president of the board of health.

The patients had secondary syphilis and were given aureomycin orally over 11 1/3 days. Cumulative results by the end of 12 to 15 months' observation, the report said, were: Successes, 76.7 per cent; reinfections, 2.1 per cent; failures, 21.2 per cent. Continued studies are needed to determine the long-range effectiveness, it was pointed out.

Surface spirochetes, the responsible organism, were eliminated from syphilis lesions in an average of 39 hours, the report added. No serious reactions were noted, and the incidence of gastrointestinal disturbances was cut in half by the use of an improved aureomycin. Two out of every three patients were seronegative at the end of the observation period.

The report compared the results with those in three series of cases which involved other forms of treatment: (1) with 2,400,000 units of aqueous amorphous penicillin; (2) with 2,400,000 units of aqueous penicillin G, and (3) with 4,800,000 units of aqueous penicillin G, each administered in 60 intramuscular injections over 7 1/2 days.

The 76.7 per cent of successful treatments in the aureomycin cases compares with 74.1, 84.4 and 86.0 per cent, respectively, in the penicillin series, it was pointed out.

"It is definite that aureomycin has a therapeutic effect in early syphilis comparable with that of the penicillin schedules described," the report commented.

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## ACUTE INTUSSUSCEPTION IN ADULTS CAUSED BY LIPOMA OF THE ILEUM

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and

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Intussusception in adults, though rare, is not a medical curiosity. In sharp contrast to its occurrence in infants, however, it is rare. In infants this condition is relatively clear cut, the etiology is usually undetermined, it is cured by operation, and its recurrence is comparatively rare; whereas, in adults, the symptomatology and physical findings are frequently vague, definite pathology is usually found, and if this causative pathology is not removed, it usually recurs. Because of the infrequency of lipomata as the cause of intussusception in adults, it is thought that a case in which such a tumor produced ileocecal intussusception and acute intestinal obstruction in an adult is worthy of reporting.

Up to 1911 only 300 cases of all types of intussusception in adults had been reported.<sup>1</sup> One hundred of this group had a tumor of the small bowel as the etiologic agent. From 1911 to 1936 Christopher<sup>2</sup> was able to collect 59 cases of adult intussusception due to tumor. Forty-three of these were secondary to benign and sixteen to malignant tumors. From the time of Christopher's report up to 1941, two hundred additional cases were found in the medical literature.<sup>3</sup> From this

small number of reported cases, the rarity of the disease can well be understood. In that the most frequent causative agent of intussusception in adults is tumor, the incidence of small bowel tumor is of particular interest. Merchant<sup>4</sup> found, on summarizing the records of the Royal Victorian Hospital and the Pathological Institute, only six benign tumors of the small intestine among 50,775 surgical specimens examined between the years 1915 and 1939. Between January 1, 1915 and May 1, 1939 he found 18 cases of benign small bowel tumor in a study of 7,340 autopsies. Raiford<sup>5</sup> found 88 cases of benign small bowel tumor in 11,500 autopsies and 45,000 surgical specimens. Only 339 authentic and well documented cases could be found in the literature up until Raiford's report in 1932. From a study of gastrointestinal tract tumors, Merchant concluded that the incidence of benign tumors of the small intestine was 8.7% of all neoplasms in the intestinal tract.<sup>4</sup>

In the tabulated tumor types as found in the small intestine, lipoma occupies varying positions from first to third as the most common type tumor encountered.

Poston,<sup>6</sup> up to 1934, was able to assemble 242 cases of gastrointestinal lipomata from the world literature. By 1938 Wiener and

From Frasier-Ellis Hospital, Dothan.

1. Eliot, Ellsworth, Jr., and Corscaden, J. A.: Intussusception with Special Reference to Adults, *Ann. Surg.* 53: 169-222 (Feb.) 1911.

2. Christopher, Frederic: Intussusception in Adults, *Surg., Gynec. & Obst.* 63: 670-674 (November) 1936.

3. Nichols, H. G.: Intussusception in Adults. A Consideration of Therapeutic Measures and a Case Report, *Surg., Gynec. & Obst.* 73: 832-837 (December) 1941.

4. Merchant, F. T.: Intussusception Due to Hemangioma of the Jejunum, *Arch. Surg.* 39: 1031-1040 (Dec.) 1939.

5. Raiford, T. S.: Tumors of the Small Intestine, *Arch. Surg.* 25: 122, July; 321, August 1932.

6. Poston, R. I.: Acute Enteric Intussusception in an Adult Caused by a Lipoma, *Brit. J. Surg.* 22: 108, 1934.



Polayes<sup>7</sup> increased this number to 259 cases, and by 1943 Schottenfeld<sup>8</sup> was able to collect 275 cases of this type of tumor. He stated that approximately 56% of the total occurred in the small intestine, and that 52% of those occurring in the small intestine occurred in the ileum. Roan,<sup>9</sup> in reporting 100 authentic cases of benign tumor of the small bowel, found 59 of them to occur in the ileum. In Merchant's<sup>4</sup> extensive study of gastrointestinal tract tumors, only 6 benign tumors were found in the small intestine among a large collection of surgical specimens, and 18 were found in the autopsy material. Six of Merchant's 24 cases of benign tumor were lipomata. Raiford,<sup>5</sup> in analyzing 986 cases of gastrointestinal tract tumor, found 210 benign lesions, with only 88 of these occurring in the small bowel.

The percentage of benign small bowel tumors which produce intussusception has been variously stated and ranges from a low of 23% in Raiford's<sup>5</sup> series to a high of 44% in Schottenfeld's<sup>8</sup> collected series of cases. Rankin,<sup>10</sup> in a study of 35 cases of small bowel tumor, found 17% of the tumors had produced intussusception. Seventeen cases out of the total of 35 were incidental findings. Thus 35% of all cases having symptoms had intussusception. Joyce<sup>11</sup> stated that 30% of small intestinal tumors result in intussusception. Merchant<sup>4</sup> reported an incidence of 29% in his series of cases. Though the reports differ as to the proportion of tumors of the small bowel that produce intussusception, it is agreed that benign tumors are much more likely to cause intussusception than are malignant ones. In Rankin's<sup>10</sup> series of cases, in which 35% of those in which symptoms were present had intussusception, only 3.6% of a series of 55 cases of carcinoma of the small bowel resulted in this condition.<sup>12</sup> Christopher,<sup>2</sup> in

his series of 59 tumors producing intussusception, found 43 to be benign and 16 to be malignant.

Numerous types of tumors have been reported as etiologic agents in intussusception. Polyps,<sup>13, 14, 15, 16, 17</sup> adenoma,<sup>18</sup> lipoma,<sup>8</sup> fibromyoma,<sup>19</sup> fibroma,<sup>4</sup> hemangioma,<sup>4</sup> carcinoid tumors,<sup>20</sup> fibromyxoma,<sup>4</sup> and lymphoma<sup>4</sup> make up a part of the reported list. In some case reports or collected series of cases, "tumors of fibrous tissue origin" are stated as the type of tumor producing the intussusception. These, of course, can fall into one of many various types of tumor. In collected series, lipoma ranks second as the etiologic agent. In Merchant's<sup>4</sup> 24 cases the following types of tumor were found: lipoma 6, fibroma 4, adenoma 3, adenomatous polyp 3, hemangioma 3, carcinoid 2, fibroadenoma 1, fibromyxoma 1, and lymphoma 1. They were located in the small bowel in the following positions: duodenum 6, jejunum 6, and ileum 12. This is a representative group of cases both as to type of tumor and to anatomic location in the small bowel. Mufson<sup>20</sup> reported one case of intussusception of the jejunum due to carcinoid tumor.

Though tumor is the most frequent cause of intussusception in adults, foreign bodies, intestinal parasites, Meckel's diverticula, and granulomatous masses due to typhoid, dysentery, tuberculosis, or so-called simple ulceration have been reported. There is a

13. Case 32372: Double Intussusception and Volvulus of Ileum, Led by Adenomatous Polyp, *New England J. Med.* 235: 393-395 (Sept.) 1946.

14. Black, B. M.: Polypoid Carcinoma of the Ileum Producing Intussusception; Primary Resection with Recovery of Patient, *Proc. Staff Meet., Mayo Clin.* 19: 142-147 (March) 1944.

15. Bowen, F. H.: Intussusception Associated with a Polyp in a Meckel's Diverticulum, *J. M. A. Georgia* 30: 390-391 (Sept.) 1944.

16. Krieg, E. G., and Lovas, W. S.: A Malignant Solitary Polyp of the Sigmoid Colon Causing Intussusception, *J. Michigan M. Soc.* 38: 1069 (Dec.) 1939.

17. Pratt, J. H., and McCreedy, F. J.: Multiple Polyps, Multiple Intussusceptions and Chylous Ascites, *Surg. Clin. North America* 29: 1209-1213 (Aug.) 1949.

18. Williams, C. and Williams, C., Jr.: Intussusception Due to Familial Adenoma of the Small Intestine, *Arch. Surg.* 59: 250-257 (Aug.) 1949.

19. O'Connor, J. M.: Fibromyoma of the Small Intestine Causing Intussusception, *M. J. Australia* 2: 491-492 (Oct.) 1946.

20. Mufson, S., and Horowitz, E. A.: Intussusception of the Jejunum Due to Carcinoid Tumor, *New England J. Med.* 224: 602-605, 1941.

7. Wiener, M. F., and Polayes, S. H.: Benign Tumors of the Ileocecal Region, *Am. J. Surg.* 40: 538, 1938.

8. Schottenfeld, L. E.: Lipomas of the Gastrointestinal Tract, *Surgery* 14: 47-72 (July) 1943.

9. Roan, O.: Intussusception Due to Benign Tumors of the Small Bowel, *Texas State J. Med.* 22: 782, 1932.

10. Rankin, F. W., and Newell, C. E.: Benign Tumors of the Small Intestine, *Surg., Gynec. & Obst.* 57: 501, 1933.

11. Joyce, T. M.: Tumors of the Small Intestine, *Ann. Surg.* 100: 949-959, 1937.

12. Rankin, F. W., and Mayo, Charles, II: Carcinoma of the Small Bowel, *Surg., Gynec. & Obst.* 50: 939-947 (June) 1930.

small number of cases in the surgical literature in which adult intussusception has been found at operation when no etiologic factor could be demonstrated. Christopher<sup>2</sup> stated that intussusception without apparent cause had been reported in 25 cases of adults, and Nichols<sup>3</sup> added one case of his own and was able to find 14 other cases reported in English between the time of Christopher's report in 1936 and his report in 1941. It is rare to find such a condition and a search for the causative agent should be given up with reluctance when no definite etiologic condition can be found.

The symptoms and physical findings of acute intussusception in adults are often vague and frequently result in abdominal exploration without a definite diagnosis. Ferrer,<sup>21</sup> in discussing intussusception in children and adults, states that the four cardinal signs and symptoms in intussusception are cramping abdominal pain, blood in the stools, vomiting, and an abdominal mass felt either by rectum or by abdominal examination. He states that these four cardinal principles are true in adults as in infants, but this is at variance with other reports. The symptoms in adults vary markedly but some degree of obstruction, either acute or chronic or recurring, is usually present. Cases have been reported when none of these symptoms were present and where intussusception was incidentally found at operation. In a study made by Eliot<sup>1</sup> it was found that the symptoms differ depending on the etiologic factor and the site of the intussusception, but that all cases secondary to benign tumors producing obstruction fell into four fairly well defined clinical groups, namely, (1) cases of acute intestinal obstruction without previous symptoms, (2) cases of acute intestinal obstruction preceded by previous bouts of obstruction with intervals of complete freedom from symptoms between the acute attacks, (3) infrequent cases of essentially chronic obstruction without marked pain or vomiting, and (4) occasional cases in which symptoms were suggestive of some other intra-abdominal disease and the true cause of the condition was discovered only at operation. He states that blood or bloody mucus in the stool is associated less constantly with intussusception in adults than in infants and that when this is

present the bleeding usually originates from the tumor or ulcer that causes the intussusception and not from the intussusception itself. The finding of an abdominal mass in adults is much less frequent than in infants, probably because of the difficulty encountered in palpation and because of the distention which is usually present. In addition, the thick abdominal wall in adults makes palpation of a small to large, rather soft to cystic mass difficult. Marked tenderness and muscle spasm are usually absent unless the process has been present a long time, resulting in perforation and complicating peritonitis. This is probably due to the protection given the peritoneum from the strangulated section of bowel by the sheath of the intussusciens. It is not unusual at all for a diagnosis of acute appendicitis to be the preoperative diagnosis in patients operated on for this condition. In the case to be reported, the preoperative diagnosis could not be definitely made but the suggested diagnosis was acute intestinal obstruction, cause undetermined.

The pathology found in intestinal tract lipomas varies. Approximately 90% of intestinal tract lesions grow in the submucosa. The remainder grow in the subserosa. They occur more frequently as a single tumor but have been reported as multiple growths.<sup>8</sup> Both submucous and subserous types may be present in the same patient. Multiple growths are most commonly submucosal. In colonic lipoma, the subserosal type predominates, whereas, in the small bowel, the submucosal type is the one usually found. There are no appendices epiploicae associated with the small bowel, and in the colonic lipoma this is a frequent site of origin of the tumor. They also differ in the two locations in that colonic lipomas frequently grow toward the peritoneal cavity, whereas, in the small bowel, due to the submucosal site of origin, they appear intraluminal. The tumors may be either sessile or polypoid. The submucosal growths are covered by mucosa and occasionally by the muscularis mucosa, whereas the subserosal variety lies directly under the peritoneum. The underlying muscular layer, regardless of whether the tumor is submucosal or subserosal, produces resistance to the direction of growth of the tumor and, as a result, the tumor grows either toward the lumen of the bowel or toward the general peritoneal cavity. All lipomas develop as a sessile growth but because of intestinal tract motility and peri-

21. Ferrer, J. M.: Intussusception in Children and Adults, *S. Clin. North America* 30: 515-528 (April) 1950.



staltic waves, which exert a pulling type force on the tumor, it is converted into a polypoid type growth. Thus, the pedicle of the tumor, especially when the tumor lies intraluminal, may vary from a tiny thread or a big cord to a broad based tumor. It is made up of characteristic fatty tissue held together by strands of fibrous tissue. In a case complicated by intussusception, vascular engorgement, surface ulceration, and edema of all layers of the bowel wall occur. These changes are frequently associated with ulceration and hemorrhagic infarction.

Treatment can be briefly summarized as follows: (1) reduction of the intussusception, followed by enterotomy and excision of the tumor and closing the bowel transversely, (2) reduction of intussusception, followed by segmental resection and end-to-end anastomosis of bowel containing the tumor, or (3) where it is impossible to reduce the intussusception, resection of the entire bowel involved by the tumor and intussusception will be necessary.

#### CASE REPORT

The following well illustrates the type of case in which multiple bouts of previous intestinal obstruction had occurred, with intervals of complete freedom of symptoms between attacks. It also illustrates the typical pathologic process found in ileal lipoma associated with intussusception and acute intestinal obstruction. A 71 year old, colored, widowed female entered the hospital on July 14, 1950 complaining of generalized cramping abdominal pain and pain in the right lower quadrant. Her present illness began three days before hospital admission when in the early A. M. she began having severe cramping pains in the lower abdomen and in the peri-umbilical area. This was followed by nausea but no vomiting. The pain increased in severity until it was of a "doubling up" character and persistent. The nausea partially subsided. She was never completely free of pain. She had no blood in her stools and her bowel habits were regular and normal.

Her past history revealed frequent bouts of severe cramping abdominal pain. These started in late adolescence, were recurrent, and had on numerous occasions been associated with nausea and vomiting, but on each of the previous occasions the attack would completely clear, leaving her without residual complaint. She has never had melena or hematemesis. Systemic review is other-

wise completely negative except for premenopausal dysmenorrhea.

Physical examination revealed a well developed, moderately obese, well preserved elderly colored female complaining of lower abdominal pain and tenderness in her right lower quadrant. Blood pressure was 140/80; pulse 86; respirations 20; and her general physical examination was negative. Examination of the abdomen showed it to be moderately distended and to be tender in the right lower quadrant. There was no muscle spasm, and no palpable abdominal mass not viscera was present. Her pelvic examination was negative.

Her laboratory findings showed a red blood count of 4,500,000 and hemoglobin of 13 grams. Her white blood count was 6,450, with a normal differential. Her urinalysis was negative except for rare granular casts. Her feces were negative for blood, ova or parasites and her Wassermann was negative.

She was operated on with a preoperative diagnosis of acute intestinal obstruction, etiology undetermined.

At operation a moderate amount of deep straw colored, non-odorous fluid was present in the peritoneal cavity. A mass was palpated in the cecum but there were no lymph nodes in the mesentery, and the examination of the rest of the abdominal contents showed no evidence of metastatic tumor. It was first thought that a carcinoma of the cecum was present, and, after preparation of the transverse colon for ileocolostomy, the tumor mass was re-investigated and a typical intussusception into the cecum was found. The intussusception was easily reduced and a mass estimated to be 10 cm. long could be palpated in the distal ileum. Segmental resection of the ileum with adequate uninvolved bowel wall on each side of the tumor was done and a primary end-to-end anastomosis was performed. The abdominal cavity was closed, leaving a Chaffin sump drain in the right lower quadrant. She received 1000 cc. of whole blood during and immediately following the operative procedure.

The sump drain worked satisfactorily during the postoperative period and was removed in approximately 48 hours. Her postoperative convalescence was entirely uneventful as regards her abdomen. On her 10th postoperative day she began to have a

low grade fever, and tenderness in the region of the lateral malleolus of the left leg and in the sole of the left foot. Twenty-four hours later she had pain in her right chest associated with depressed breath sounds and moist rales. X-ray examination showed an area of consolidation in this area. It was thought that she had thrombophlebitis and a small pulmonary infarction in her right chest. Conservative therapy resulted in complete recovery. On August 3, 1950 she was discharged with no complaints and her abdominal wall was well healed.

#### SUMMARY

A case of acute intestinal obstruction secondary to acute ileocecal intussusception produced by a submucous lipoma of the distal ileum is presented. The variations in symptomatology from acute intussusception in adults and that of infants is presented. The rarity of benign intestinal tumors is pointed out through a collective review of reported cases. The pathology of small intestinal and colonic lipomata is discussed. Benign tumors, because of their growth characteristics, are the principal cause of small bowel intussusception in adults.

### PREMEDICATION AND CHOICE OF ANESTHESIA IN THE SURGICAL PATIENT

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The purpose of preoperative preparation for any surgical procedure is to bring the patient to the operating room in the best possible physical condition, and to correct any factors which may interfere with the operation or result in postoperative complications.

Every rational patient going to surgery has considerable concern regarding the event. He is interested in those who are going to perform the surgery and administer the anesthetic. He usually knows the surgeon but rarely does he know the anesthesiologist, and not too infrequently he is far more concerned about the anesthesia than the surgery. He wants to know what is going to be done; how much is it going to hurt him; and how will he feel afterward. All are most important to the patient.

The visit of the anesthesiologist really marks the beginning of premedication since it tends to lessen apprehension on the part of the patient, and with this visit two important things are accomplished: physician-patient relationship is established, and the confidence of the patient in his anesthesiologist is assured.

Equally important, however, is the factual knowledge that the anesthesiologist obtains which enables him to formulate a basis for deliberate, objective evaluation of the best anesthetic or combinations of anesthetics to be employed. These facts include:

(a) History of any previous surgery. How the patient reacted to it, to his anesthesia and premedication.

(b) Any specific fears or interdictions regarding any particular anesthesia.

(c) Any known or suspected allergic reactions to previously administered drugs.

(d) History of any respiratory or circulatory abnormalities or peculiarities. How often does a patient say: "I forgot to tell the Doctor so-and-so, and probably it isn't important, but as a child I had severe asthma or 'shortness of breath,'" or some other sign of danger to be considered. The history is always reviewed before the visit. A physical examination is performed, especially of the respiratory and circulatory systems, and variations noted. Laboratory work is checked and if not meeting the necessary requirements, steps are taken to modify same. Abnormalities of laboratory findings alter the type and choice of anesthesia.

Premedication<sup>1</sup> has four desirable ends: (1) to allay apprehension, (2) decrease pain, (3) suppress undesirable reflexes, and (4) counteract undesirable side effects of the anesthesia and anesthetic agents. These are accomplished by appropriate doses of: (a) a barbiturate to allay apprehension and decrease metabolism, (b) a narcotic to reduce pain and to produce a euphoria and further reduce metabolic oxygen require-

From the Department of Anesthesia, Medical College of Alabama.

1. Dripps, R. D.: Pharmacological Basis for Preoperative Medication. Surg. Clin. North America 24: 1377-1388 (Dec.) 1944.



ment, and (c) a belladonna derivative to depress the reflexes, and, if scopolamine is used, to further allay apprehension and also to provide amnesia.

Which and how much of these drugs is to be used depends on: (1) the age of the patient,<sup>2</sup> (2) the metabolic rate known or to be estimated, (3) the physical state and allergic history of the patient, and (4) the anesthetic to be given. Regarding the anesthetic, the following is generally true: "If a general anesthetic is to be employed one usually goes light on those drugs that depress respiration and heavy on those drugs that depress reflexes." If spinal or regional is used, then cortical depression is desirable and reflex depression not so necessary. Particular care is necessary with premedication in the case of the very young or very old and in cases of extreme metabolic abnormality.

What are the factors affecting the metabolic rate? These are many. First of all the age of the patient: there is a very low rate in the newborn and in the aged; however, on the other hand, there is quite a resistance to anesthesia in both these age groups. Secondly, the patient's pain threshold: pain increases metabolic rate considerably. Next in importance affecting metabolic rate are the thyroxin level in the blood, the temperature, and emotional excitement. All of these factors must of necessity be controlled if we are to meet the ultimate aims of proper premedication.<sup>3</sup>

In order to understand the actions of the premedicants, let us briefly review their pharmacology.<sup>3</sup>

The barbiturates, sodium salt of urea and maluronic acid, are central nervous system depressants which can be made to produce almost any degree of depression from light sedation to deep hypnosis. They appear to act on the thalamic portion of the diencephalon. Oral administration of hypnotic doses of these drugs is usually followed by a slight slowing of respiration, probably as a result of attendant hypnosis. Larger doses depress the respiratory center directly, and death from massive doses is due, as a rule, to respiratory failure. The margin between the amount of barbiturate which will cause

respiratory failure and that responsible for cardiac arrest is sufficiently wide to permit the successful application of artificial respiration in combating the effect of overdoses. Respiratory depression is more likely to occur during intravenous administration, for the degree of depression is dependent not only upon the total dose but upon the rate of injection as well. Slow administration is essential.

The sedative and hypnotic doses of barbiturates used clinically cause no significant change in circulation. Large doses given orally or by rapid intravenous administration cause a fall in blood pressure due to vasodilation, but generally there is a prompt return to normal. There is no direct toxicity to the myocardium, nor is there any disturbance of rhythm or conduction.

The blood constituents are not altered by barbiturates in moderate doses, and there is no appreciable change in blood sugar concentration unless depression is of such depth that acidosis results.

Kidney function is not seriously impaired provided there is not a prolonged period of deep depression and the hepatic function is unimpaired.

Distribution of barbiturates in body tissues and fluids has not been determined completely. There is no greater concentration in the brain than in other tissues, and analysis of spinal fluid has revealed insignificant amounts even after administration of large doses. Following intravenous administration, the drug remains in the blood in appreciable quantities for only a short time.

Barbiturates are transported through the placenta to the fetus and may cause depression of the newborn when excessive doses are used. The drug may also appear in breast milk, but not in concentrations harmful to the nursing infant.

The body eliminates barbiturates in two ways:<sup>3</sup> by excretion through the kidneys and by destruction in the liver. The longer acting compounds (barbital and phenobarbital) depend to a greater extent upon the kidneys for elimination, which probably accounts in part for their prolonged action. Needless to say, these drugs should not be used in the presence of renal disease. As much as 85 per cent of the total amount of barbital administered has been recovered in the urine, and the drug may be excreted for a period of several days.

2. McNeal, Alice: Personal communication.

3. Goodman, Gilman: *Pharmacological Basis of Therapeutics*, New York, Macmillan Company, 1940, p. 130.

The shorter acting drugs (Seconal and pentobarbital) are broken down in the body, probably in the liver, and are not recovered in the urine when the dosage is within the sedative range. These drugs do not depend upon an intact renal system for excretion, though their effect is prolonged when there is extensive liver damage.

We may conclude, therefore, that the barbiturates should be prescribed with caution in patients with advanced cardiovascular renal disease or impaired liver function.<sup>4</sup> When kidney damage is present the shorter acting drugs which are destroyed in the liver are preferable, but in the presence of extensive liver damage even these should be used cautiously.

The second aim of premedication,<sup>1</sup> the relief of pain, is best accomplished by the opium derivatives and their synthetic analogues. Of course, the old time standby is morphine, the outstanding therapeutic property of which is its ability to relieve pain. This is believed to be accomplished by a selective action on pain centers in the thalamus. The administration of morphine in moderate doses (up to 15 mgm.) produce euphoria, muscular relaxation, freedom from anxiety, rapid flow of imagination and uncontrolled thought, inability to concentrate, lethargy, dimness of vision, apathy, and eventually sleep. Respiration is depressed, the pupils somewhat constricted, hunger abolished, and vomiting may occur.

The depression of respiration is due to direct action on the respiratory center in direct proportion to the dose. In morphine poisoning death is due to respiratory arrest. Morphine stimulates the reflex centers of the spinal cord and is therefore contraindicated in strychnine poisoning, tetanus, status epilepticus, and similar convulsive states. Smooth muscle tone of the gastrointestinal tract is increased. Gastric emptying time is delayed because of decreased peristalsis and contraction of the pyloric sphincter. Similarly, in the small bowel, propulsive peristalsis is diminished and muscular tone is increased. Emptying of the large bowel is delayed and there is increased absorption of water with resultant constipation.

Morphine is well absorbed from the gastrointestinal tract and subcutaneous tissues. It is not absorbed by the intact skin but will

pass through abraded skin and mucous membranes. It is not stored appreciably in the body since withdrawal symptoms appear in addicts within a few hours after the drug is stopped. It readily passes the placental barrier and is said to cause addiction in infants born of mothers receiving the drug regularly. Morphine is eliminated principally by the kidneys but also appears in the excreta. A large portion is destroyed by the body, probably by the liver.<sup>3</sup>

Dilaudid is made by treating morphine chemically. It is approximately ten times more analgesic than morphine but produces less hypnosis. The duration is shorter and doses must be repeated more frequently. Less euphoria, less nausea and less vomiting are produced.

Demerol (isonipercaine, meperidine) is a synthetic compound with analgesic properties which are inferior to those of morphine but superior to those of codeine. This drug relaxes the smooth muscle of the intestines and bronchi, and occasionally produces some euphoria. As with morphine, addiction and tolerance occur. Except in the aged and in the presence of expanding intracranial lesions, this drug does not cause as much respiratory depression as morphine. It is readily absorbed by the gastrointestinal tract and subcutaneously. It is inactivated by the liver, a small portion being excreted in the urine. One added advantage over morphine is its ability to diminish secretions but not sufficiently to replace the belladonna group of drugs which I will now discuss.

Atropine and scopolamine are incorporated in the premedication of the surgical patient mainly to decrease the salivary and mucous secretions of the respiratory tract and to provide a clear airway. Scopolamine is vastly superior in this respect, its drying effect being much more potent and much more prolonged than that of atropine. The decided reduction or elimination of sweating also prevents too great a loss of body fluids during operation. Both drugs reduce or abolish vagal reflexes, such as the hilar reflex and carotid sinus reflex, and are valuable adjuncts to anesthesia.

Disadvantages of the belladonna group<sup>4</sup> of drugs are not to be overlooked. Dryness of the mouth and throat are distressing; loss of moisture in alveolar walls prevents free interchange of gases, retards ciliary activity, and they may cause a rise in body temperature and an increase in heart rate.

4. Cullen, Stuart C.: Anesthesia in General Practice, 1946 Yearbook.



Both act to block post-ganglionic cholinergic (acetylcholine) impulses at the effector organ.<sup>3</sup> Both tend to raise the metabolic rate slightly and both act as respiratory stimulants and so reduce to some extent the respiratory depression of the opium derivatives. There are some essential differences. Atropine has no higher center effects, while scopolamine depresses the cortex and causes some drowsiness and occasionally delirium, especially in the presence of pain. Remember that this drug is not an analgesic. Scopolamine is a better drying agent than atropine, while atropine has more effect on structures supplied by the vagus.

The accepted ratio of opiate to drying agent† to best offset respiratory depression is twenty-five to one. In children and the elderly, atropine appears to be somewhat more practical. However, the ratio is somewhat less in children. Stuart Cullen† offers the following doses for children:

| Age  | Anesthesia       | Drug  |
|------|------------------|---|
| 1-2½ | General          | Atropine 1/200                                |
|      | Spinal           | None  |
| 2½-5 | General          | Morphine 1/12-1/8-1/6<br>Atropine 1/200-1/100 |
|      | Spinal           | None  |
| 5-10 | Cyclo-Ether      | Morphine 1/8 Scop. 1/200                      |
|      | Nitrous-Ethylene | Morphine 1/8 Scop. 1/200                      |
|      | Spinal           | None  |

From about 15 years to approximately 65, always remembering the metabolic rate and physical condition, the triad of a barbiturate, a narcotic and a belladonna derivative are used in appropriate doses. Seconal, grains 1½-3, or pentobarbital (Nembutal) in the same quantities 1½ hours before surgery, with Demerol 100-150 mgm.; or morphine 1/6-1/4 and scopolamine 1/200-1/100 one hour before surgery are more commonly used. There is one notable exception, and that is when a patient is undergoing a cesarean section. These patients are unpremedicated, except for a belladonna derivative, if inhalation anesthesia is to be employed. If too apprehensive, and a spinal is to be given, Demerol 25/50 mgm. intravenously just prior to surgery may be given. After the baby is delivered any indicated sedation may be given intravenously.

When a patient reaches the age of approximately 65, the dosage of premedicating drugs should be reduced. The metabolic

rate of these patients is low, their vascular-respiratory reserve is reduced as a general rule, and, frequently, even small doses of sedatives and narcotics produce undesirable depression. In these patients barbiturate dosage should be reduced to approximately ¾ grain. Demerol is less depressing than is morphine for all patients in this age group who are suffering from acute pain. Atropine is the belladonna derivative used for these patients since, in this age group as with the very young, scopolamine causes excessive restlessness and in many instances delirium. Demerol, 25-75 mgm. doses, and atropine 1/200 are most often employed.

In emergency cases premedication can be given intravenously (and should be).<sup>5</sup> Because of the certainty of absorption of the dose and the predictability of the time of the effects, many anesthesiologists prefer to give all premedication by this route. Morphine and Demerol have their maximum effects in fifteen minutes. Nembutal may also be given intravenously to the desired degree of narcosis very satisfactorily. The amount of drugs given by this route is reduced over that given intramuscularly except for the belladonna fraction, the dosage of which remains the same.

In cases where shock is present it is mandatory to give premedication intravenously to assure affect, since there may be a deposit of the drug in the tissues due to failing circulation.<sup>5</sup> Later, a severe depression may result as the circulation improves and the deposit of drug is released into the circulation.

#### CHOICE OF ANESTHESIA

The most commonly employed anesthesia for infants and children is still open-drop ether, or ether insufflation with air as the vehicle. Ether as an agent is well tolerated but the method of administration can be improved by supplementing the ether-air mixture with oxygen in the case of the open-drop technique or by substituting oxygen for air in the insufflation technique.

While it is true ether causes stimulation of respiration, it is also very probable that part of the stimulation in the case of ether-air anesthesia is the result of hypoxia.

Ether anesthesia for children is usually induced with divinyl ether because of its

5. Beecher, H. K.: Delayed Morphine Poisoning in Battle Casualties, J. A. M. A. 124: 1193-1194 (April 22) 1944.

very rapid action. Oxygen should also be used with this drug because there is no doubt that the convulsions occasionally seen with divinyl ether and the cardiac arrests reported are hypoxic in origin.

Rectal Pentothal and Avertin, rectally, can be employed for infants and children with considerable satisfaction in many instances, particularly in orthopedic surgery, neurosurgery, and plastic surgery.

Cardiac surgery in children presents some problems.<sup>6</sup> There are those who believe that it is mandatory to induce anesthesia with cyclopropane because of the very rapid induction with high oxygen concentration of the inspired gases. However, we have used both open-drop ether and Pentothal here.

When properly handled, the use of spinal and regional anesthesia for surgery in children is entirely practical. Great care must be exercised not to use toxic quantities of drugs of excessive concentrations. One half per cent procaine solution for regional is adequate. One milligram of procaine per kilo of body weight is adequate for spinal, and the spinal drug should be diluted to not more than a two per cent solution before injection.

Because of the relatively high metabolic rate of children, no hypoxia should be permitted. Endotracheal anesthesia may be safely employed to insure the airway provided care is taken to prevent laryngeal edema from too large a tube, or from trauma as the result of rough technique. If a circle anesthetic gas machine is employed it is desirable to assist inspiration slightly by gentle rhythmic compressions of the breathing bag to reduce respiratory effort of the small patient to a minimum, since labored respiration for any period of time may well result in collapse of both respiration and circulation.

The choice of anesthesia for adults depends upon many factors controlled by the surgeon or anesthetist. Generally, most patients will accept whatever anesthetic their surgeon and anesthetist feel is best. Under no circumstances should a patient be given an anesthetic he does not want, particularly a spinal, unless it is absolutely necessary.

The majority of patients are perfectly able to take any of a variety of anesthetics, but, as has been pointed out, it is essential that

the physiologic and physical assays of the patient be determined before he is anesthetized by any agent or method.

The majority of surgeons will accept the anesthetic chosen by the anesthesiologist. The latter should, however, always try to choose the type of anesthesia most suited to the surgeon, provided there is no reason why such cannot be employed. In other words, the choice should be a cooperative effort. If, for any reason, there is a difference of opinion, this can always be resolved by a review of the patient and his record by the surgeon and anesthesiologist together.

It is the opinion of most anesthesiologists that spinal anesthesia should not be used for the shocked patient or one who may go into shock. Spinal anesthesia is also best avoided in patients with concealed hemorrhage, such as ruptured ectopic pregnancy.

Regional anesthesia is ideal for the patient in shock if he must receive surgery. Cyclopropane is the anesthetic of second choice. Intravenous morphine or Demerol and nitrous oxide-oxygen may be employed, using a minimum of Pentothal. Deep ether anesthesia is to be avoided.

A word of caution regarding general anesthesia in the emergency case: Try to ascertain how long before injury or the onset of the acute process the patient has had food. Invariably, gastric function stops after injury or with severe acute pain. It is very important that the stomach be emptied if undigested food is reasonably suspected to be present. More tragedies have occurred from the vomiting of food by the emergency patient during some phase of an inhalation anesthetic, with aspiration into the lungs of an undetermined quantity of the material, than from any other factor due to anesthesia. It may be unkind to subject the injured or acutely ill patient with a full stomach to gastric lavage or emesis but he will invariably vomit sooner or later and it is much better that it be done under controlled conditions.

The aged patient, as the very young patient, requires special consideration. The aged one has lost a very large part of the respiratory and vascular adaptability that is possessed by the patient of less years. It is therefore extremely important that respiratory and vascular depressions be avoided. In this age group, utilization of multiple agents, avoiding the undesirable ones, is

6. Robbins, B. H.: Cyclopropane Anesthesia, Baltimore: Williams and Wilkins Company, 1940.



best employed. Regional anesthesia, with light sedation, can be used in many instances. Nitrous oxide-oxygen and very small doses of Demerol intravenously provide excellent anesthesia for many patients. Deep anesthesia should be avoided where possible. Small doses of curare-like drugs can be employed to obtain adequate relaxation with a minimum of depression, using very light anesthesia. Spinal anesthesia is suited in selected cases.

The general principles employed in selecting an anesthetic are as follows:<sup>7</sup>

(a) There is no such thing as choosing anesthesia for a particular type of surgery. Anesthesia is chosen for the patient only. It is true that most patients can take any number of a variety of anesthetics without any noticeable difference, and in these the most convenient anesthetic for the surgeon should be employed, but in certain cases no compromise should be made.

(b) No patient should be given an anesthetic he does not want or is afraid of. This is particularly true of spinal anesthesia. Most patients want to be asleep during surgery and frequently a spinal will be accepted if the patient is assured he will be put to sleep.

(c) The facts must be faced that all anesthetics are potent protoplasmic poisons. They constitute some of the most powerful drugs in the pharmacopeia and it is indeed unwise to take lightly the responsibility of their administration.

#### CONCLUSION

Survival of the anesthetic does not mean good anesthesia any more than survival of surgery could be interpreted to indicate good surgery. Fortunately, most patients will survive anesthesia no matter how poorly chosen or how poorly administered is the anesthesia. Failure to evaluate properly the importance of anesthesia in the past is why we are now struggling to revive this branch of medicine from the status of a technical maneuver to which it has degenerated.

The expert anesthesiologist, by properly choosing and administering good anesthesia, by fulfilling his corollary duties of providing hydration, electrolytic balance, and blood

replacement, actually does much toward improving the patient's condition over his preoperative status. Good anesthesia starts with a personal and adequate preoperative evaluation of each patient, remembering his history and physical examination, is continued by intelligent and selective preoperative medication, and terminated by finally selecting and administering the proper surgical anesthesia.

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**Fracture Treatment**—The type of treatment depends on the individual case. Each fracture with its complications is a law unto itself demanding individual common sense surgical judgment. The treatment should be adaptable to the fracture, the fracture must not be adapted to the treatment.

The writer does not believe that a standard method for the treatment of fractures in every case possible. Not until every type of fracture can have the same bone and soft structure damage, the same external force producing it, occurring in patients of the same age and having the same general physical and local conditions, with the same resistance or recuperative power, can we hope to standardize the treatment of fractures. If this could be possible, treatment of fractures would cease to be a science and would not demand our own common sense judgment and expert opinion.

Too frequently are superficial and careless physical examinations made, the results being that fractures are often overlooked. Certain cardinal physical signs are not always necessary to indicate a fracture. This is especially true in fractures of the spine where a patient may receive a slight or moderate fall on the buttocks, and afterwards suffer very little or no pain whatever in the spine, but when roentgenograms are taken a compressed fracture of one or more vertebrae is seen. A lateral and often an oblique roentgenogram of the spine when one suspects any bone involvement should be made, as well as the anterior-posterior view. We should always be suspicious of a fracture of the spine in even the slightest injury, directly or indirectly, to the back or buttocks.

Roentgenograms, when possible, with antero-posterior and lateral views, should be made before attempting the reduction of a fracture. Following the reduction these same views should be made. These are not only necessary for checking up the position of the fracture, but as a protection and record for the doctor treating the case. Fractures cannot be treated by roentgenograms alone. The reduction of a fracture constitutes only one of the important processes in its treatment.

Early reduction should be done, providing local and general symptoms permit. Casts when applied should be cut along the whole course of application if there is any doubt whatever as to circulation. Of course, where the fragments are displaced they should be reduced as early as possible.—*Conwell, J. M. A. Georgia, August '52.*

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7. Dillon, John B.: Importance of Preoperative Evaluation of Patient for Proper Premedication and Choice of Anesthesia, *Arizona Med.* 7: 28-32 (Oct.) 1950.

## AIDS IN THE DIAGNOSIS AND TREATMENT OF EARLY ECTOPIC PREGNANCY

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The occurrence of extra-uterine pregnancy has doubled during the past 15 years. For that reason a review of the diagnostic aids that are helpful in establishing an early correct diagnosis is indicated. The explanation for the increasing ectopic pregnancy rate is twofold:

1. Live births have increased approximately 65 per cent in the United States during this period, and every time 150 live babies are born one ectopic pregnancy occurs.

2. The widespread use of the sulfonamides and penicillin in the treatment of salpingitis is the second reason for the increasing frequency of extra-uterine pregnancy. When patients with acute pelvic inflammatory disease are treated with the newer drugs, the tubes, instead of being completely occluded, remain partially open but scarred. This favors implantation of the fertilized ovum before it reaches the uterus. Although the etiology in every case is not explained on the basis of previous inflammatory disease of the tube, it has been shown that ectopic pregnancy occurs with a 50 per cent greater frequency in the colored race.

### THE MOST IMPORTANT AID

The greatest single aid in the diagnosis of ectopic pregnancy is a mental alertness for the disease when a female patient in the childbearing age complains of *abdominal pain*. This faculty has been called "being ectopic minded," "having an ectopic consciousness," and "a high index of suspicion for ectopic pregnancy." Eastman<sup>1</sup> calls it "everlasting remembrance that lower quadrant pain in any woman between 15 and 50 may mean tubal pregnancy." As a constant

reminder, one university clinic has a sign painted on its walls reading "Is this an ectopic pregnancy?" Unless the examining physician is continually conscious of the possibility of ectopic pregnancy, the most helpful aids in the diagnosis will not be exploited. The preoperative diagnosis was missed 33 times in a series of 233\* consecutive case records studied, and in not a single instance was the possibility of ectopic pregnancy considered. There were two deaths, both a result of failure in immediate diagnosis on the patient's admission to the hospital. In neither patient was ruptured ectopic pregnancy thought of, although a suggestive history was recorded.

The symptoms of the disease depend on the location of the pregnancy and whether or not the pregnancy is growing undisturbed. An unruptured extra-uterine pregnancy may produce no symptoms. A pregnancy that is threatening to rupture or abort from the end of a fallopian tube will produce different symptoms from one with frank rupture and massive intra-abdominal hemorrhage.

### FACTS OF VALUE OBTAINED FROM THE HISTORY

*Abdominal Pain.* Abdominal pain is the most important symptom of this disease. It may be sudden in onset, knife-like, cramping, or a dull constant ache. The pain may be associated with fainting. The location of greatest discomfort is usually on the side of the lesion, but occasionally is bilateral or described as radiating around the umbilicus. The abdominal pain is often associated with a desire to urinate or defecate. When blood leaks from the rupture site it flows anteriorly around the bladder or posteriorly to the cul-de-sac. This blood irritates the peritoneum covering the bladder and rectum, producing an urge for urination and defeca-

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From the Department of Gynecology of the Medical College of Alabama.

1. Eastman, Nicholson J.: *Williams' Obstetrics*, ed. 3, New York: Appleton-Century-Crofts, Inc., 1950, p. 517.

\* All patients were surgically treated in Jefferson-Hillman and St. Vincent's Hospitals during a 6½ year period, July 1, 1945 to April 1, 1952.



tion. Of the 233 charts analyzed, 230 patients (98.7 per cent) stated they experienced abdominal pain. The three patients with no abdominal pain harbored unruptured ectopic pregnancies.



Fig. 1—The most important aid in the diagnosis of ectopic pregnancy is mental alertness for the disease.

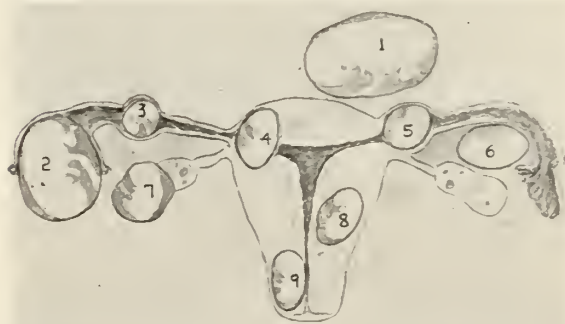


Fig. 2—Anatomical locations of ectopic pregnancy:

1. Abdominal
2. Fimbriated end of tube
3. Ampullary portion of tube
4. Interstitial pregnancy
5. Pregnancy in isthmus of tube
6. Intraligamentous pregnancy
7. Ovarian
8. Pregnancy superimposed on adenomyosis
9. Cervical pregnancy

**Vaginal Bleeding.** A prominent symptom is vaginal bleeding. This bleeding is most often described by the patient as spotting. It may or may not be preceded by amenorrhea. The following statement was repeated many times by the patients in this series:

"My last period was two weeks ago; it was lighter than usual, and I have been spotting ever since." Only a few patients exhibited profuse vaginal bleeding. Two hundred and five of the 233 patients admitted abnormal vaginal bleeding (88 per cent). Vaginal bleeding means death of the fetus or some disturbance in the placental attachment.



Fig. 3—Vaginal spotting, a common sign in ectopic pregnancy.

**Amenorrhea.** Amenorrhea was listed as a symptom in 172 cases (76.4 per cent). It was usually listed as a missed period, two weeks late, three days late, and in a few cases two missed periods. A patient in the childbearing age who has menstruated regularly during the previous twelve months who is late any number of days in menstruating is considered to be pregnant some place in the genital tract until proved otherwise. In differentiating between pregnancy and its complications the following ratios should be borne in mind: Roughly, in 170 pregnancies 150 will continue to term, 19 will end in abortion, and one will be an extra-uterine pregnancy.

#### FACTS OF VALUE OBTAINED FROM PHYSICAL EXAMINATION

**Abdominal Tenderness.** Abdominal tenderness was a positive physical finding in the greatest number of patients in this series. It was present 218 times (94 per cent). The tenderness is most marked on the side of the lesion; however, it may be generalized. Rigidity is not present unless the patient is seen shortly after the initial rupture. Usually, after the initial stage of internal bleeding has passed, the abdomen becomes somewhat distended and doughy on palpation.

**Tenderness on Motion of the Cervix.** When a tubal pregnancy ruptures or aborts, blood is spilled into the peritoneal cavity. If



Fig. 4—Tender cervix on motion suggests ectopic pregnancy.

the cervix is moved by the palpating hand, the irritated peritoneum causes the patient to experience acute pain. In differentiating ruptured tubal pregnancy from intra-uterine abortion this sign is important. Rarely is the cervix tender on motion in threatened or incomplete uterine abortion; whereas, in ruptured tubal pregnancy exquisite tenderness is noted. One hundred forty-four of the patients reported in this series had a tender cervix on motion (61.3 per cent).

**Shock.** Thirty-eight patients were admitted to the hospital in shock. Our criteria for shock were a systolic blood pressure of less than 80 millimeters of mercury and a pulse rate of 100 or above. When patients are admitted in shock the diagnosis is suggested; however, in one patient a high index of suspicion for ectopic pregnancy was lacking and death resulted one month later. Many patients go into a shock-like state initially when only a few ounces of blood have been lost from the circulation. This fainting is a part of the well-known bathroom sign. The shock-like state is temporary, and the patient recovers spontaneously. If bleeding continues rapidly for any length of time, the patient goes into real shock for which heroic measures must be instituted to prepare her for operation. The amount of blood loss does not necessarily determine when the patient will go into shock. The rapidity of its spill into the peritoneal cavity is of more importance. Some of these patients were in profound shock following recent rupture of a tubal pregnancy, and only a small amount of blood was found in the peritoneal cavity at operation. Others walked into the admitting department with a blood pressure of 120/80 and a red blood cell count of a million and one-half. Operation revealed the peritoneal cavity to be filled with blood.

In the latter type case the blood loss into the peritoneal cavity was slow but had continued for several days. As the blood leaked from the circulation, physiologic change took place to compensate for this blood loss, preventing the syndrome of acute wound shock. Such patients are ambulatory and have good blood pressures, yet are anemic, have shortness of breath, and a rapid pulse. Shock is impending and all should be treated with blood transfusions before surgery is undertaken. Although sudden rapid intraperitoneal hemorrhage may be an exception, in general the degree of shock is directly proportional to the amount of blood loss.

**Other Physical Findings.** Other physical findings that may be present but are not constant are: softening of the cervix, slight enlargement of the uterus, a mass in either adnexal region, and bulging of the cul-de-sac.

#### SPECIFIC DIAGNOSTIC AIDS

**Cul-de-sac Aspiration.** The one most helpful specific aid in the diagnosis of ectopic pregnancy is aspiration of the cul-de-sac. This procedure has recently been given the dignified name of "culdocentesis" by Beacham and Beacham.<sup>2</sup> Simple needle puncture of the cul-de-sac is a harmless procedure. The cervix is grasped with a tenaculum as is shown in Fig. 5, and an 18 gauge needle on a 10 cc. syringe is inserted in the cul-de-sac. If rupture of an ectopic pregnancy has occurred, blood will be present in the cul-de-sac which does not clot on standing. If the withdrawn blood clots it means that the needle has pierced a pelvic vessel and fresh blood has been aspirated. It may mean that fresh bleeding has been precipitated by the hands of an overzealous examiner. Often the blood aspirated from the cul-de-sac is indistinguishable from that withdrawn from a peripheral vein. The clotting feature will determine if it is from a vessel or from the peritoneal cavity.

We have used cul-de-sac aspiration in the clinic, in the emergency room, and on the wards of the gynecologic service in approximately 700 instances without any complications arising from this procedure. It can be done in the office without anesthesia. In one patient the rectum was punctured and feces

2. Beacham, Dan W., and Beachman, W. D.: Culdocentesis, New Orleans M. & S. J. 103: 283-288, 1951.



aspirated; however, no complication resulted from this mishap.

Several different types of fluid may be obtained on cul-de-sac aspiration. If non-clottable blood with flakes of fibrin is obtained, it is indicative of intraperitoneal hemorrhage. When pus is found, a pelvic abscess is indicated. Occasionally a sanguineous, watery fluid may be obtained which is indicative of acute pelvic inflammatory disease. This is edema fluid of acute inflammation. If it is examined under the microscope, red cells will be present, but white blood cells will also be present in a far greater proportion than expected in a simple peritoneal transudate or blood from internal hemorrhage. Occasionally, straw colored fluid may be aspirated in chronic pelvic inflammatory disease.

A diagnosis of acute appendicitis was made in one patient by microscopic examination of the material aspirated from the cul-de-sac. The peritoneal fluid was hazy in appearance and was filled with pus cells. Normal peritoneal fluid is clear and contains a minimum of cellular elements. In this patient the uterus was freely movable and caused no pain on motion. By eliminating salpingitis in this manner it was concluded that inflammation was present in the abdominal cavity and the appendix was the most likely offender. Although only slight tenderness was present in the appendiceal area on abdominal palpation, operation revealed a suppurative retrocecal appendix.

Cul-de-sac needle puncture was done 106 times in which the diagnosis was proved to be ectopic pregnancy. The test was positive 101 times. In two cases the blood clotted. A thorough pelvic examination immediately preceding aspiration caused fresh hemorrhage in each case. Blood will clot only once. If it has already clotted in the abdomen, blood elements with flakes of fibrin will be obtained by needle puncture, but if fresh hemorrhage occurs immediately prior to aspiration, and before the blood has had time to clot, clottable blood will be obtained.

In five instances cul-de-sac puncture failed to obtain blood in which the diagnosis of ectopic pregnancy was subsequently confirmed. In one of these the pregnancy was unruptured. In one case 150 cc. of blood was found at operation; however, the patient had several examinations between needle puncture and operation which may have accounted for the blood. In two instances false pas-

sage of the needle was the reason blood was not obtained. In the fifth patient pelvic tenderness was so exquisite the procedure was unsatisfactory. Had the examiner been a little more persistent a positive puncture would have been recorded.

There were six positive cul-de-sac punctures in which no ectopic was found at operation. One case exhibited a hematoma on the anterior rectal wall. One case was that of chronic bilateral salpingitis with an old hematoma in the cul-de-sac. Two cases were that of a ruptured follicular cyst with 500 cc. of blood in the peritoneal cavity. Blood-tinged edema fluid was obtained from one patient with acute salpingitis, and the sixth patient had chronic salpingitis which yielded a straw-colored serosanguineous transudate.

Cul-de-sac aspiration in these 112 cases achieved a correct preoperative diagnosis in 92 per cent. A more careful study of the aspirated fluid would have increased the percentage. Simple puncture of the cul-de-sac in the two fatal cases would have yielded non-clottable blood. A lack of everlasting remembrance that lower quadrant pain may mean tubal pregnancy was the reason this procedure was omitted.

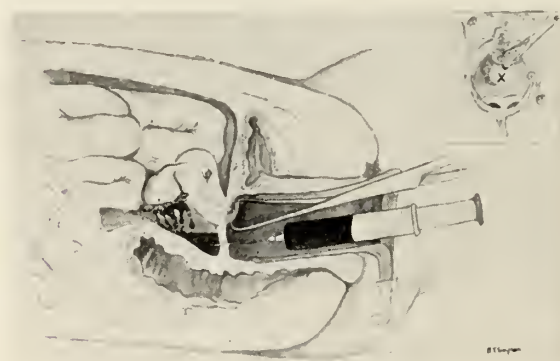


Fig. 5—Technique of cul-de-sac aspiration.

**Hormonal Pregnancy Test.** Hormonal pregnancy test, when positive, may be of help in establishing a diagnosis. A positive hormonal pregnancy test means only that live chorionic tissue is growing in the genital tract and may indicate incomplete abortion or a normal intra-uterine pregnancy. Certain non-pregnancy states may be associated with a positive pregnancy test, such as a corpus luteum cyst and menopause. One patient was subjected to operation on the basis of a positive frog test and no ectopic pregnancy was found. This patient complained of menopausal symptoms and was

forty-four years of age. We have not found hormonal pregnancy tests to be of great value in diagnosing ectopic pregnancy.

*Dilatation and Curettage.* Dilatation and curettage was done in only a few of our cases. If the patient has bled for any length of time, the decidua at the time of curettage has usually already shed.

Rommey, Hertig and Reid,<sup>3</sup> in a study of the endometrial scrapings in 115 cases of ectopic pregnancy, found that only 19 per cent showed evidence of decidua. Patients with incomplete abortion that are confused with ectopic pregnancy may be differentiated by microscopic study of endometrial curettings.

*Blood Picture.* The blood picture is dependent upon the amount of blood loss and how recent the blood has leaked into the peritoneal cavity. A red blood cell count immediately following rupture may show no reduction in count; however, after fluid has been drawn from the tissues into the blood stream the count will be reduced. If bleeding continues for several days, the count will be reduced in proportion to the amount of blood lost from the circulation. One patient had a red blood cell count of 750,000 and a hemoglobin of 20 per cent. The white cell count is not of great diagnostic significance. A high white cell count is unusual, the average being 10,000 to 12,000 per cm. A reduction in the red cell count, not explained by the amount of external blood loss, should suggest a diagnosis of ectopic pregnancy.

*Culdoscopy.* Culdoscopic examination is an ideal means of correctly diagnosing the obscure case preoperatively. We have used the culdoscope in examining thirty patients. Only two of these patients appear in this series. In the hands of someone trained in its use the culdoscope is a valuable aid.

#### CORRECT PREOPERATIVE DIAGNOSIS

In this series of 233 cases a correct preoperative diagnosis was recorded 200 times (85.5 per cent). During the same period of time 25 patients were operated upon with a preoperative diagnosis of ectopic pregnancy that was not confirmed by operation. If we take all the cases that were missed, including those that were thought to be ec-

topic pregnancy but were not confirmed, the corrected preoperative diagnosis was 77.5 per cent. This corrected preoperative diagnosis could have been improved to above 90 per cent had needle puncture of the cul-de-sac been employed in each case and operation decided upon after a study of the fluid obtained. Blood was found in the peritoneal cavity in 92.2 per cent of the cases. The diseases most commonly mistaken for ectopic pregnancy, when an extra-uterine pregnancy was present, were fibroids, pelvic inflammatory disease, and ovarian cyst. Two cases each were diagnosed preoperatively as endometriosis, appendicitis, and intestinal obstruction. Salpingitis and physiologic cyst of the ovary were the most frequent diseases diagnosed as ectopic pregnancy preoperatively, when an extra-uterine pregnancy was not present. In two cases no disease was found, and in one case an intra-uterine pregnancy was the final diagnosis.

#### REPEAT ECTOPIC PREGNANCIES

There were six repeat ectopic pregnancies. Two of these occurred in the stump of the removed tube. In each case a partial salpingectomy had been performed in treating the initial lesion. The subsequent pregnancy occurred in the stump by external migration through the other tube. These two cases present strong evidence for total salpingectomy if the opposite tube is left patent. In women who become pregnant following an ectopic pregnancy the chances of a second extra-uterine pregnancy is ten times greater than in women who have never had one. In one instance a preoperative diagnosis was made of intestinal obstruction in spite of the fact the patient had had a previous ectopic pregnancy. This lack of mental alertness was accentuated in the same patient by failure to do a vaginal examination "because the patient was menstruating."

#### AIDS IN TREATMENT

*Presurgical Measures.* The treatment of ectopic pregnancy should always be surgical. The only disagreement concerns the time of operation, particularly in the severely anemic and the patient in shock. It is our belief no fixed rule is applicable to every patient with ectopic pregnancy. Each patient should be carefully studied and the time of operation selected when the surgeon feels the patient's aliveness can be maintained through and following the operation.

3. Rommey, Seymour L.; Hertig, Arthur T., and Reid, Duncan E.: Endometria Associated with Ectopic Pregnancy, Surg., Gynec. and Obst. 91: 605-611, 1950.



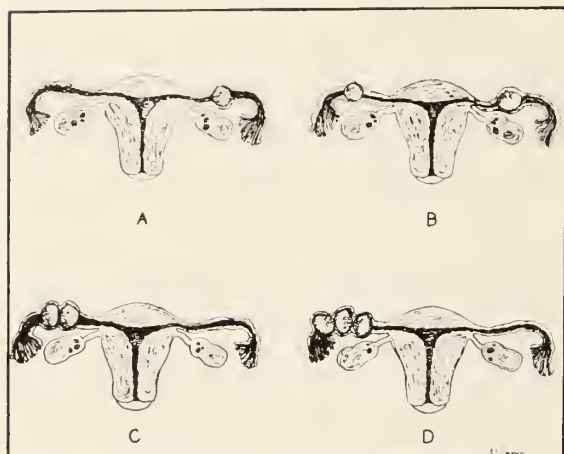


Fig. 6—Multiple pregnancies

- A. Tubal combined with intra-uterine pregnancy
- B. Bilateral tubal pregnancy
- C. Twin tubal pregnancy
- D. Triplet tubal pregnancy

In some patients the pregnancy may be unruptured or only threatening to abort from the end of the tube, blood loss is minimal, and the patients are often in good physical condition. Such patients need no pre-operative preparation with blood transfusions.

Another group of patients may show evidence of slow hemorrhage over a period of two or three weeks without shock. Patients in this group are severely anemic but no active hemorrhage is presently occurring. They will stand surgery much better if multiple transfusions are given over a period of two or three days in preparation for surgery.

A third and most important group to be treated are the patients in shock. Many authorities contend that immediate operation should be undertaken and that no time should be wasted in transfusing the patient. These authorities state that the blood and incision should begin simultaneously. Patients who are in shock or severely anemic do not tolerate added trauma well, and a much wiser plan would be to move the patient in shock to the operating room and treat aggressively with blood transfusions. Surgery should be undertaken when the patient has responded to blood replacement therapy. This response will be manifested by an elevation of blood pressure and a decrease in the pulse rate. If the patient shows no response after three or four units of blood, continuing intra-abdominal hemorrhage is evident. The abdomen should then be opened without further delay. It is as-

sumed that 2000 cc. of blood will counteract the added trauma incident to operation. Two or three blood transfusions may be given simultaneously if the need is urgent. To manage these patients in any other way is to forget the lessons learned in the treatment of the severely wounded so well described by Edward D. Churchill,<sup>4, 5</sup> Henry K. Beecher,<sup>5, 6</sup> and others.<sup>5</sup>

The treatment of each patient should be individualized. Severely anemic patients and those in shock should have blood replacement therapy before operation is begun. The surgeon, in his haste to control the intra-abdominal hemorrhage incident to a ruptured ectopic pregnancy, should first give the patient at least sufficient blood to compensate for the added trauma inflicted by surgery.

A total of 231,500 cc. of blood was given the 233 patients, an average of two units each. Autotransfusion was used in one instance in this series. It proved to be a life-saving measure as the patient was of a rare blood type and no donors could be obtained. Autotransfusion is not advisable unless the blood in the peritoneal cavity is from recent hemorrhage.

*Surgical Treatment.* Total excision of the affected tube is recommended. When the abdomen is opened the uterus should be grasped with a uterine elevator and lifted above the contained hemorrhage. Both tubes and ovaries can then be quickly inspected and the site of the pregnancy determined. Do only that which is necessary to control bleeding is a safe rule to follow. Total salpingectomy accomplishes hemostasis, and is preferable to partial salpingectomy or simple ligation of the tube without excision. The advisability of additional surgery depends on the condition of the patient and the judgment and skill of the operating surgeon. After all bleeding points have been secured, blood clots and blood should be cleaned from the peritoneal cavity. Blood in the peritoneal cavity is slowly absorbed. It is a cause of postoperative morbidity and may initiate peritoneal adhesions.

4. Churchill, Edward D.: The American Surgeon, A. U. S., Surg., Gynec. & Obst. 84: 529-539, 1947.

5. Symposium on Shock, Army Service Graduate School, Army Medical Center, Washington 12, D. C., May 7-9, 1951.

6. Beecher, Henry K.: Preparation of Battle Casualties for Surgery, Ann. Surg. 121: 769-792, 1945.

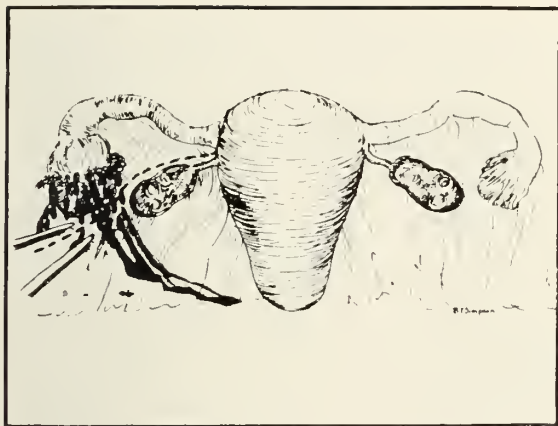


Fig. 7—Technique of total salpingectomy.

#### CONCLUSIONS

1. The most important aid in the diagnosis of ectopic pregnancy is mental alertness for this disease on the part of the examining physician.
2. The most reliable single diagnostic aid is obtaining non-clottable blood by aspiration of the cul-de-sac.
3. The transfusion needle must share equal importance with the scalpel in the treatment of patients who are severely anemic or in shock incident to a ruptured ectopic pregnancy.
4. Total extirpation of the affected tube is the surgical procedure of choice in the treatment of this disease.

## ERYTHROBLASTOSIS IN ONE OF DIZYGOTIC TWINS

### A CASE REPORT

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and

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In view of the small number of cases of erythroblastosis in double ova twins, this case in which one twin died of erythroblastosis seventeen hours after birth and the other survived and showed no signs of the disease seems of especial interest.

In June 1951, twin boys were born to a Negro mother after seven months pregnancy. The mother had had some bleeding all through the pregnancy but had no other complications. She had had no transfusions or intramuscular blood. One previous pregnancy in 1949 resulted in twins. She was Rh negative, albumin agglutinin titer positive 1:16, saline agglutinin titer positive 1:4. The father was Rh positive to CDE cells. Both were group O.

Twin I was Rh negative and had a negative Coomb's test.

Hemoglobin—16.85 gm., 109.5 per cent  
R. B. C.—5,430,000  
W. B. C.—13,687  
Nucleated R. B. C.—33 per cent  
Reticulocytes—12.7  
Birth wt.—1400 gm.

This twin did well and was discharged from the premature nursery when he was four weeks old.

Twin II was Rh positive, with a positive Coomb's test, at 12 hours of age.

Hemoglobin—14.3 gm., 93 per cent  
R. B. C.—4,000,000  
W. B. C.—6,600  
Nucleated R. B. C.—20.3 per cent  
Reticulocytes—1244 per 100 W. B. C.  
Birth wt.—1425 gm.

When this baby was 8 hours old the nurse noticed that his feet and legs were swollen. At 12 hours of age, edema extended up to his waist and he was pale and jaundiced. When he was 17 hours old, an exchange transfusion was begun but he died during the procedure.

Autopsy showed jaundice and edema. The abdominal viscera had a yellowish cast. The liver seemed normal and weighed 45 gm. The spleen weighed 12.5 gm. (av. 4 gm.) and the microscopic examination showed many nucleated red blood cells in the liver and spleen. Other organs were not remarkable. Diagnosis: Erythroblastosis fetalis.

The twins born in 1949, a boy and a girl, both Rh positive, are now large healthy children. The boy weighed 5 lb., 1¼ oz. He went home with his mother, was breast fed, and showed no evidence of erythroblastosis. The girl weighed 4 lb. 7¾ oz., and stayed in the premature nursery for two months. She ate poorly and vomited frequently. Erythroblastosis was not suspected. At one year of age she came to the clinic with a severe



secondary anemia—R. B. C. 4,260,000; hemoglobin 6 gm. (39 per cent); no sickling. After six months treatment with diet, iron and vitamins, her count was within normal range.

A case of dizygotic twins has been presented in which the Rh positive twin died of erythroblastosis at 17 hours of age and the Rh negative twin is living and well.

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3. Potter, E. L.: Erythroblastosis, Fetal. Double Ova Pregnancy, *J. Pediat.* 24: 449 (April) 1944.

## PERSONAL EXPERIENCE IN THE USE OF BONE BANK BONE

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Refrigerated bone for grafts has proved safe, practical, and well tolerated. Since Inclan's 1942 report,<sup>1</sup> Wilson<sup>2</sup> has stated that his results are as good as when he used autogenous grafts, with the exception that healing in some instances has been a little slower.

In February 1951, the Birmingham Baptist Hospital installed a top opening deep freeze unit that maintained a constant inside temperature of minus ten to minus thirty degrees centigrade. Shortly thereafter, we obtained a lower extremity of a healthy forty-one year old white male immediately following amputation just distal to the hip. Soft tissues were removed under aseptic technic. The bone was sectioned into strips approximately three fourths of an inch wide, and four to eight inches long, including the attached marrow. Bits of each section were submitted for culture in sterile, stoppered, glass tubes. The strips were separately placed in autoclaved, dry, screw capped, glass jars and stored in the freeze unit. Most of the bits of bone cultured for a minimum of four days on thioglycollate media showed no bacterial growth. Then, corresponding jars were labeled: "Ready for Use." The bones reported contaminated were thawed, and submerged in ether for fifteen minutes, and then placed on a sterile table for a like period, to allow surface ether to evaporate. More bone bits were taken for culture and

the re-treated specimens were stored in the freeze section marked: "Hold For Culture Report."

No bone has had to be discarded, and contaminated bone has been repeatedly washed until a negative culture has been obtained.

Our use of such stored frozen bone started on April 17th, 1951. The recipient was a forty-two year old white male with thirteen day old fractures of the middle third of the right ulna and radius in malposition. After open freshening of the fragment ends and reduction, strips of tibial cortex were onlaid across the fracture lines and attached to each fragment with metal screws. No unusual reaction followed, and he was sent home on the fourth postoperative day. Two months and eight days later firm union was demonstrated by roentgenogram. No disability remains in appearance or function of this forearm.

The next eleven cases were spine grafts between May 22nd and July 17th to correct instability following ruptured disc removal, or investigation of disc and nerve root status of the fifth and, sometimes in addition, the fourth lumbar vertebra. "Clothes pin" or "H" type grafts were used to stabilize the unstable vertebrae and to reduce the exaggerated lumbar lordosis. Nine months after, ten of these eleven are following their usual occupation without pain and their roentgenograms indicate fusion.

The one exception was operated on May 22nd and he has non-union of the lumbosacral end of his graft. Although he is unable to resume coal mining, he drives a light truck on a clothes cleaning route and he does

1. Inclan, Alberto: The Use of Preserved Bone Graft, *J. Bone & Joint Surg.* XXIV: 81, 1942.

2. Wilson, P. D.: The Use of Refrigerated Homogenous Bone Transplants, *J. Bone & Joint Surg.* XXXIII-B: 3, 1951.

not desire additional surgery because he considers his disability to be comparatively minimal.

Bank bone has been used successfully in every type case ordinarily treated with a grafting procedure.

H. W. M., thirty-seven year old white male, had a benign tumor that destroyed the laminae and pedicles between the second and third lumbar vertebrae. The involved parts were removed and the defect repaired by application of cortical strips, fastened superiorly and inferiorly with metal screws. Four and one half months later the patient is ambulatory and has no pain. Union cannot be demonstrated at this time.

H. C. A., thirty year old white female, had a benign giant cell tumor of a femur. The tumor was excised and the cavity packed with rib chips. Seven months later the defect was almost completely eliminated and the patient had no pain or disability.

A Brittain fusion was done on G. N., nine year old Negro female, with tuberculous caries of a hip. Arthrodesis of the hip is demonstrated four months postoperatively. The graft does not yet appear solidly fused.

D. R., nine year old white female, had a dislocation of a hip following postpoliomyelitis paralysis. The femur head was pulled down with well-leg traction and a shelf operation was done, using cortical and cancellous bone for reinforcement. Five months later the hip is stable.

F. H., thirteen year old Negro male with painful flat feet, was operated on, and cortical bone was used in each foot as a key graft to aid in obtaining an arthrodesis of the talo-navicular and naviculo-cuneiform joints. Definite union cannot be demonstrated three months later, but the feet are improved and he is walking with minimal discomfort.

Contributions to the bank are being made continuously in direct proportion to the staff members' knowledge of its existence and function. Bones from amputations by other surgeons, and ribs sacrificed in thoracic procedures, become more and more available. Occasionally, bones are obtained from an autopsy on a freshly dead body.

During the first year seventy-six homogenous bone bank transplants have been done on seventy-five patients. Two surgical infections have occurred. This compares

favorably with four infections in one hundred and thirty-one autogenous transplants during the twenty-seven months preceding the existence of the bank.

M. C., twenty eight year old Negro male, presented a non-union of a fracture of the middle third of a tibia with a one and one-half inch shaft defect of two years duration. Six months after all drainage had ceased the defect was filled with cortical bone, inlaid at the proximal end and onlaid at the distal end. Draining sinuses developed and the graft sequestered. Amputation followed. Preliminary skin replacement would have furnished a better chance for success.<sup>3</sup>

S. A. M., thirteen year old white female, had lumbar scoliosis. The curvature was corrected by the turnbuckle plaster jacket method. A fusion operation followed. The sutures were removed from a healed skin incision on the eleventh day. Three weeks later five sinuses were present. Many of the bone chips have sequestered. A solid fusion is hoped for without further major surgical interference.

The results in spinal fusion operations seem much better since bank bone has been available. The extravagant use of bone afforded is probably responsible for this because fewer inadequate grafts are performed.

Bank bone has eliminated dreaded, additional, and painful operations on the patient's body.

Such transplanted bone has proven to "take" as well as autogenous bone.

Consequently, it is our opinion that bank bone will be more and more widely used for grafting procedures by orthopedic surgeons.

1937 First Avenue N.

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3. Terhune, S. R.: Graft Substitution of Long Bone Shaft Defects, *South. Surgeon* XII: 2, 1946.

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Tuberculosis of the lungs may be present without causing any symptoms. The disease may pass through a complete cycle of activity, even to healing, without the patient's actual knowledge of such. The symptoms may manifest themselves insidiously or appear abruptly as an acute pneumonia. Tuberculosis may manifest itself first in some other organ without any clinical indication of lung involvement. Tuberculosis of the lungs may assume so many different clinical forms that it must be considered in the differential diagnosis of practically every lung disease. —J. M. Blake, M. D., *New York State J. Med.*, Feb. 1, '52.



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## CIRRHOSIS OF THE LIVER

"The incidence of cirrhosis of the liver is increasing. Whereas previously it was seen mostly with alcoholism or malnutrition or as a complication of cholecystitis and cholelithiasis, physicians today are confronted with additional causative factors. The widespread epidemic hepatitis of World War II produced a sporadic inoculation of persons hitherto never exposed to the virus of infectious hepatitis. The etiological relationship of acute infectious hepatitis to cirrhosis of the liver is favored by most authors.

"Sulfonamides and other hepatotoxic agents have taken their toll of the liver. Aureomycin has been rather extensively used in the treatment of acute and chronic hepatitis. Recently Lepper reports that among 14 patients given large doses of aureomycin for serious infections, both by mouth and intravenously, 7 showed clinical evidence of liver dysfunction. Furthermore, necropsy in five and biopsy in one of these cases showed pathological changes in the liver cells; however, the doses of aureomycin used are now considered to be excessive.

"Finally, the establishment of blood banks and the use of non-irradiated plasma have resulted in serum homologous hepatitis in some patients and have made cirrhosis of the liver a disease of serious import. No longer can one regard blood transfusions as an innocuous procedure unless the medical history of the donor is known."

The above are the opening paragraphs of the recently published study of this subject by Portis and Weinberg.<sup>1</sup> Their discussion of hepatic cirrhosis is altogether excellent, but for reasons of space it cannot be fully reviewed here.

The authors' summary and conclusions follow: "The incidence of cirrhosis is increasing. The use of sulfonamides and other hepatotoxic agents and the occurrence of serum homologous hepatitis and epidemic hepatitis of World War II may be partly responsible. Recognition of the cause of liver disease is necessary for effective therapy.

"Patients should be at bed rest and preferably hospitalized. The decrease in hepatic blood flow of cirrhotic patients while standing offers theoretical confirmation of the

1. Portis, S. A., and Weinberg, S.: Recent Advances in the Medical Treatment of Cirrhosis of the Liver, J. A. M. A. 149: 1265 (Aug. 2) 1952.

clinical impression that early mobilization of these patients is detrimental. Bed rest is imperative during jaundice in cirrhotic patients. A high caloric, high protein diet is important in the long-term management of chronic liver disease. A diet of 3,500 calories is suggested.

"Intravenous infusion of carbohydrates is desirable in order to hasten the regeneration of liver parenchyma. In patients with atrophic cirrhosis and ascites, the use of hypertonic dextrose solution induces diuresis. Infusions of amino acids may be necessary in order to maintain normal nitrogen balance in patients unable to eat a full diet. Administration of whole blood or plasma may be beneficial when there is marked hypoproteinemia, anemia, or a hemorrhagic tendency.

"While it has become almost routine to include supplementary administration of vitamin B complex to cirrhotic patients, definite evidence of deficiency in cirrhotics, per se, has not been demonstrated. Vitamin K should be administered regardless of prothrombin or bleeding time. Vitamin A and D in doses of 25,000 to 50,000 units, given one or two times daily, are of definite value. Choline and methionine seem to be of value when fatty infiltration of the liver exists, although this is controversial, and their action other than that found in a high protein diet has yet to be demonstrated beyond doubt. The use of crude aqueous liver extract seems to aid in detoxication and should be a part of the therapeutic regimen for patients with severe liver disease. Intravenous use of a water-soluble liver extract has been recommended for anorexic patients. We advocate use of potassium iodide in cases of jaundice. If syphilis is a causative factor, the indication for the iodide is definite.

"Although the crucial factors leading to retention of fluid with ascites and edema in cirrhotic patients are not known, the employment of salt restriction and diuretics as well as salt-poor albumin is suggested; however, such use is not without certain dangers.

"The value of the administration of cation exchange resins is limited, since the amount recommended, 60 gm. per day, is insufficient and larger doses are impractical. Patients on prolonged salt restriction must be

watched carefully for signs of the low salt syndrome. Abdominal paracentesis increases this danger when preceded by severe salt restriction and the use of diuretics. On the basis of preliminary work, corticotrophin (ACTH) therapy and cortisone therapy seem to be contraindicated in treatment of severe liver cirrhosis. Surgical treatment of portal hypertension has its best indications in patients with extrahepatic portal obstruction and is hazardous when there is a marked liver insufficiency.

"Although laboratory studies have become very important tools for the diagnosis and management of liver disease, they are more valuable when interpreted in the light of keen clinical observation."

So rapidly and extensively has the picture of hepatic disorders, particularly cirrhosis, changed during the last few years that it is not easy for many practitioners to keep themselves adequately informed in regard to the progress being made. It is incumbent upon all doctors to keep themselves aware of the newer methods and procedures in diagnosing and treating cirrhosis of the liver. And studies such as those of Portis and Weinberg offer an excellent means of keeping the profession alert and informed in this particular field.

#### GAMMA GLOBULIN IN POLIOMYELITIS

Whether gamma globulin will be effective in the prevention of paralytic poliomyelitis is not now known. On the basis of animal experiments and preliminary study on humans, it is possible that globulin will have value in human poliomyelitis, but serious questions remain to be answered before such a hope can be substantiated. Nevertheless, public dissemination of information on the status and objectives of current studies, incompletely presented or misunderstood, has created a serious demand for gamma globulin which cannot be met.

Virtually the entire output at current production rates is required to meet the demand for prevention or modification of the course of measles and infectious hepatitis.

Under the circumstances, it is obvious that the existing limited supply and current production of gamma globulin should be reserved for use in these diseases in which its efficacy has been established.



## A SON'S APPRECIATION OF HIS FATHER

By

J. GILLIS SANDERS, M. D.

Foley, Alabama

William Bryan Sanders of Troy died on July 9th, 1952 as a result of a fall and skull injury sustained while walking home from his customary afternoon office hours. In two weeks he would have been ninety-two years old. He had once remarked, "I rolled out of the cradle working and hope to go to my grave working." His greatest joy was his work. He cared nothing for baseball, fishing, hunting, or the movies, because it was "more fun to practice medicine."

Those in the practice of medicine today would do well to imitate this man. He loved his work more than the reward.

In this day of twelve years in grade and high school, four years academic college study, four years in medical college, two years internship and frequently two or three years residency, the career of Dr. Sanders is astonishing. Born in Pike County on July 24, 1860, he received only the reconstruction era country school education before entering Southern Medical College, now Emory University. There the requirements for a degree of Doctor of Medicine were two six months courses of study. With this educational background Dr. Sanders became one of the most skilled diagnosticians, internists, and practical surgeons of southeast Alabama.

His surgery, on kitchen tables, by flickering lamplight, saved many lives. Obstetrics, in the home, with not even a telephone or automobile to bring assistance, was a burden to be assumed almost daily. Many people are living today because he was doctor, nurse, and cook. His horse, saddle bags, and his own tireless, patient, and intelligent reasoning substituted for hospitals, laboratories, and specialists. There were many occasions when he was away from home for one and two days, working to save life, without even being in communication with consultants.

By his incessant study Dr. Sanders kept fully abreast of all the changes in medicine and, shortly before his death, was a constant reader of and subscriber to current medical journals and text-books.

His self education was not narrow. He became an authority on historical, political,

literary, and religious writings. His pauses on street corners were the occasions for a group of listeners.

Dr. Sanders' utter disregard for the monetary considerations of his profession was exemplified by the words of an old colored mourner who came to his funeral, "He ain't never turned nobody down."

From the date of his graduation in 1885 to his death in 1952 Dr. Sanders' life was devoted to the intelligent and selfless answer to the call for help. He never said "tomorrow" nor "how much."

If the example set by William Bryan Sanders is followed, the profession of the practice of medicine will always be great.

## SCIENTIFIC SESSION PLANNED

The Alabama Surgical Division of the International College of Surgeons, with the Alabama Academy of General Practice and the Montgomery County Medical Society, will present a one-day scientific program in Montgomery on Thursday, October 9. All Alabama physicians are invited, and it is noted that this meeting has been approved as formal postgraduate credit for members of the Alabama Academy of General Practice. A social program is being planned and will terminate with a banquet, in the evening, at which the speaker will be Congressman Albert Rains of Gadsden.

The scientific program will include the following: Cervical Pain, Dr. Jackson Bostwick (Montgomery); Surgical Aspect of Congenital Heart Disease, Dr. William Scott (Vanderbilt University, Nashville); Genito-Urinary Disease as a Cause of Non-Urological Complaints, Dr. George C. Poore (Euclid Clinic, Cleveland); Partial Gastrectomy in Peptic Ulcer, with Report of 500 Cases, Dr. Lon W. Grove (Emory University, Atlanta); Breast Cancer Diagnosis and Treatment, Dr. Louis P. River (Loyola University, Chicago); Urological Complications and Gynecological Surgery, Dr. Ed Williams (Vanderbilt University, Nashville); Vascular and Neurological Phenomena in Orthopedics, Dr. Don Miller (Chicago); Orthopedic Problems, Dr. A. Scott Hamilton (Monroe, Louisiana); Problems in Diagnosis and Treatment of Hyperparathyroidism, Dr. J. O. Morgan (Gadsden); Pelvic Pain, Dr. Harry H. Jenkins (Knoxville, Tennessee); and Cancer of the Cervix, Drs. Harold E. Simon and Byrn Williamson (Birmingham).

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*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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**W. A. Dozier, Jr.**  
**Director of Public Relations**

The last article to appear in this section of the Journal was a plea for each man to study the issues before us in the coming election and to study ever so carefully what each party's platform had to say about those various issues. This column shall be dedicated to giving you the health planks of the platforms of each of the two major political parties. No comparisons will be made, for that is left to each person. They will be stated in chronologic order as they became known. Only one word of warning should be given. It is true that to a physician the health plank is likely to be the most important thing; but each of us should remember that there are other issues at stake, and in many instances these issues are of more importance to the whole society than the health issue. This plank must be considered in relation to the whole. It is the overall picture that is important; and although this one plank is being quoted here, it is taken out of context. To be safe you must look at the rest of the platform.

The Republican platform has the following to say concerning health:

"We recognize that the health of our people as well as their proper medical care cannot be maintained if subject to federal bureaucratic dictation. There should be a just division of responsibility between government, the physician, the voluntary hospital and voluntary health insurance. We are opposed to federal compulsory health insurance with its crushing cost, wasteful inefficiency, bureaucratic dead weight, and debased standards of medical care. We shall support those health activities by government which stimulate the development of adequate hospital services without federal interference in local administration. We favor support of scientific research. We pledge our continuous encouragement of improved methods of assuring health protection.

"The tradition of popular education, tax supported and free to all, is strong with our

people. The responsibility for sustaining this system of popular education has always rested upon the local communities and the states. We subscribe fully to this principle."

About two weeks later the Democratic Party's platform appeared. Its health plank reads as follows:

"We will continue to work for better health for every American, especially our children. We pledge continued and wholehearted support for the campaign that modern medicine is waging against mental illness, cancer, heart disease and other diseases.

"*Research:* We favor continued and vigorous support, from private and public sources, of research into the causes, prevention and cure of disease.

"*Medical Education:* We advocate federal aid for medical education to help overcome the growing shortages of doctors, nurses, and other trained health personnel.

"*Hospitals and Health Centers:* We pledge continued support for federal aid to hospital construction. We pledge increased federal aid to promote public health through preventive programs and health services, especially in rural areas.

"*Cost of Medical Care:* We also advocate a resolute attack on the heavy financial hazard of serious illness. We recognize that the costs of modern medical care have grown to be prohibitive for many millions of people. We commend President Truman for establishing the non-partisan commission on the health needs of the nation to seek an acceptable solution of this urgent problem."

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Medical science on the march will be highlighted at the sixth clinical session of the American Medical Association in Denver, December 2-5. Doctors from all over the United States will gather to hear about the newest scientific and medical developments. Subjects of particular interest to the family physician will be stressed.

The recently enlarged Municipal Auditorium will be taken over for the scientific sessions and exhibits and the technical exposition. Color television and medical motion pictures will bring to the doctors the newest surgical techniques and clinical procedures.



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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

#### MENTAL ILLNESS

We hear a great deal about mental health these days. This condition, also known as mental hygiene, emotional health, social maladjustment and various other things, is receiving more attention than ever before. There are frequent references to it in the newspapers and over the radio. It is discussed at public meetings. It is occupying more and more time at medical and lay gatherings. It is, in short, being recognized as a constantly increasing health and social problem.

With all that attention, this problem should be familiar to most of us. Yet only a comparative few of our people—the man and woman in the street—still realize how important it is. Few have anything like a concrete conception of the part mental illness plays in the happiness of individual Americans and Alabamians. We are, generally speaking, still pretty ignorant regarding the extent of the tragedy it brings into our homes, the number of lives it wrecks, the number of families it disrupts.

Let us consider this problem for a few minutes. Let us take a glance at its many and tragic ramifications. Let us try to get a life-size picture of it. Let us try to get an idea of the magnitude of the mental health problem—or more specifically, the mental ill health problem—in present-day life and living.

How important is mental illness in the broad picture of the health and happiness of our people? How many Americans and how many Alabamians are mentally sick?

Unfortunately, we do not have any reliable figures on this state's victims of mental illness. Even such estimates as may be available are likely to be pretty badly away from the truth. However, we do have pretty dependable estimates for the United States as a whole. One is that some nine million Americans (residents of continental United States) are suffering at this moment from

mental illness and other personality disturbances. The National Association for Mental Health, Inc., to which the writer is indebted for most of the information contained in the present paper, made it public some time ago, along with some other information regarding mental illness.

If that estimate is correct, then about six per cent of us Americans are mentally sick. Fortunately, all of them are not seriously sick. It would certainly be incorrect and unkind to refer to that many of our fellow countrymen as being crazy. But that many—about one person out of every 16, on an average—have departed, permanently or temporarily, from complete normal mental health.

If that six per cent average applies to this state—and there is no reason to think it does not—then approximately 196,000 Alabamians are now mentally or emotionally sick. They are considerably more than enough to populate a city one and a half times as large as Montgomery. The nine million Americans with mental or emotional problems considerably exceed the population of New York City.

As already pointed out, not anything like all of those nine million mentally and emotionally sick Americans are actually victims of mental illness as the term is generally understood. The mentally sick as we think of them are said to number only about a million and a half, or about one-sixth of the total. The other 7,500,000 are believed to be suffering from what the spokesman for the National Association for Mental Health, Inc. calls "other personality disturbances." Still another large segment of the population, estimated at about a million and a half, or about half the present population of Alabama, is known as "mentally deficient people." If we add them to the total, we reach the staggering figure of about ten and a half million mentally and emotionally sick Americans. That total is considerably more than three times the present estimated population of this state.

One person out of every twelve currently being born in the United States will, before he dies, suffer this form of illness seriously

enough to require institutional treatment. (That estimate is based upon figures for New York State. Those applying to Alabama and the United States as a whole probably would not be very different, if they were available.) Naturally, those babies who will develop less severe forms of mental illness and find it difficult to fit into the social order are much more numerous. However, there is no basis for anything like a correct estimate as to their actual number.

On an average day, there are said to be approximately 650,000 Americans in hospitals for mental illness. Expressed differently, there are enough of them to populate six cities about the size of Montgomery or two about the size of Birmingham. These, remember, are people with pretty serious mental illnesses. They do not include those who are not normal mentally and emotionally but have been able to get along without institutional treatment. Let us see what that spokesman for the National Association for Mental Health, Inc. has to say about those institutionalized victims of mental illness:

"The patients in mental hospitals make up on any day almost half (47%) of all the patients in all the hospitals in the United States. In addition, on any day there are about 120,000 mentally deficient and about 20,000 epileptic patients in institutions for the mentally deficient and epileptic. (The mentally deficient in these institutions constitute less than 10 per cent of the mentally deficient in the total population.) Taken together, the patients in mental hospitals and in institutions for the mentally deficient and epileptic make up about 55% of all the patients in all the hospitals in the United States."

The mentally sick die, of course, like the rest of us. As they do so, their names are removed from the records. But there are others, many others, to take their places. Every twelve months approximately 350,000 Americans are admitted to institutions of this kind. About 250,000—a quarter of a million—are admitted for the first time. The other 100,000 are returned to such institutions after making a try at adjusting themselves to life outside, and failing. During an average year approximately a million Americans are treated in mental hospitals for a wide variety of illnesses. The country's many psychiatric clinics—some operated by official public health agencies, others by non-profit groups and others by psychiatric experts engaged in private practice—are said to provide various types of service to some 200,000 people. This total

includes a considerable number of children.

But even these figures do not cover the entire scope of the mental health problem. For, remember, only a relatively small number of those needing institutional treatment are fortunate enough to get it. There is good reason to think that about 30 per cent of all the men, women and children who become patients in general hospitals are actually victims of various forms of mental illness or of other personality disturbances or are suffering from physical ailments related in one way and another to mental illness or personality disturbances. The same is said to be true of about half of all those who are treated for various illnesses by general practitioners.

And what has been the armed forces' experience with mental and emotional illness among the men who were ready to serve their country in uniform in time of emergency?

During World War II approximately 900,000 men between the ages of 18 and 37 were turned down for military service for this reason alone. This figure becomes more foreboding when we consider that it does not include those, such as patients in mental institutions, who were obviously unfit for military service prior to being called up for such service. Nor does it include the large number of would-be service men who were rejected because of mental deficiency. (Mental deficiency, as Selective Service officials interpret it, includes a variety of mental conditions largely involving subnormal intelligence but not insanity or serious emotional disturbance.)

That spokesman for the National Association for Mental Health, Inc., declared:

"The 900,000 rejectees were about 18% of the 5,000,000 men rejected for all causes. They were about 5% of the 18,000,000 men examined. About 460,000 were discharged from the service (with medical discharge) because of mental illness. This is about 36% of the 1,250,000 total medical discharges. In addition, about 250,000 were discharged from the service (with administrative discharge) for neuropsychiatric reasons, including personality disturbances, mental deficiency and epilepsy."

How about the relationship between mental ill health and crimes of various kind? Unfortunately, the extent to which the former affect the latter can only be conjectured. But that there is a connection, an important connection, there is no doubt. There certainly would not be 1,750,000 seri-



ous crimes committed every year in the United States if mental and emotional illness and social maladjustments could be eliminated. Nor would some 50,000 Americans be under the curse of narcotic addiction. The country's problem drinkers would drop sharply from the present estimated 3,800,000. Those suffering from severe chronic alcoholism would be a great deal fewer than the 950,000 estimated to be fighting that curse at this moment. So would the people who commit suicide, estimated at some 17,000 a year. So would the youngsters between seven and 17 who get into trouble with the law, said to number about 265,000 every 12 months, or about one out of every 83.

Unfortunately, there is no "mental illness age." You cannot say of this condition, as you can of a number of physical illnesses, that you are very unlikely to get it until you reach a certain age or can stop worrying about it after you reach a certain age. Mental illness is indeed an all-age problem. Babies fall victims of it in earliest infancy and in fact are born under its curse. It appears in old age. And it strikes at all ages in between.

However, certain types do have a tendency to appear more often at certain ages than others. The condition known broadly as psychosis is seldom found, for example, under the age of 15. This broad classification covers the conditions known as schizophrenia (or dementia praecox), manic-depressive psychosis, paranoia, cerebral arteriosclerosis, senile psychosis, involutional psychosis, alcoholic psychosis and general paresis, among others. It is said that fewer than one per cent of all the new, or first-time, admissions to state mental hospitals are under 15. About 16 per cent—approximately one out of six—are said to be between 15 and 29. About 45 per cent, slightly less than half, are between 30 and 59. And about 38 per cent, somewhat more than a third, have reached or passed their 60th birthday.

One of the most cheering sides of the mental health picture is the mentally sick person's greatly improved outlook. It, frankly, is not as bright as we'd like for it to be. But much is being done to make it brighter. Let us turn again to the National Association for Mental Health, Inc.:

"About 40% of the patients admitted to state mental hospitals are discharged within a five-year period. Of the patients who are discharged,

about 90 per cent are regarded as improved or recovered. The most probable duration of hospitalization for those who are eventually discharged as improved or recovered is 6 months or less. The likelihood of discharge with favorable outcome decreases sharply after two years, and reaches a very slow point by the end of five years."

No doubt the outlook for our mentally sick would be much brighter than it is if there were more facilities to care for them. For the facilities are woefully inadequate in this state. Here is what the National Association for Mental Health, Inc. has to say about them nationally:

"There are only about 420,000 such beds (for mental conditions) today against a total need of 750,000, according to federal government standards of 5 beds for mental illness per 1,000 population.

"About 3 out of every 4 state mental hospitals report overcrowding. Forty-three percent say they are overcrowded in excess of 20%; 29% say they are overcrowded in excess of 30%; 8% say they are overcrowded in excess of 50%.

"According to the American Psychiatric Association, not a single public mental hospital meets its standards for personnel."

The problem of mental illness is indeed very much with us. It is still a problem of major proportions in spite of notable progress. Let us give it the attention and the consideration it demands.

## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

### SPECIMENS EXAMINED

June 1952

|   |        |
|---|--------|
| Examinations for diphtheria bacilli and Vincent's .....         | 123    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 1,231  |
| Brucella cultures .....   | 25     |
| Typhoid cultures (blood, feces and urine) .....                 | 676    |
| Examinations for malaria .....                                  | 400    |
| Examinations for intestinal parasites .....                     | 3,433  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 29,268 |
| Darkfield examinations .....                                    | 2      |
| Examinations for gonococci .....                                | 1,721  |
| Examinations for tubercle bacilli .....                         | 3,008  |
| Examinations for meningococci .....                             | 0      |
| Examinations for Negri bodies (microscopic) .....               | 118    |
| Water examinations .....  | 1,807  |
| Milk and dairy products examinations .....                      | 4,066  |
| Miscellaneous .....   | 1,469  |

Total 47,347

# BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

## CURRENT MORBIDITY STATISTICS

1952

|                         | May  | June | E. E.*<br>June |
|-------------------------|------|------|----------------|
| Typhoid and paratyphoid | 4    | 8    | 8              |
| Undulant fever          | 1    | 7    | 2              |
| Meningitis              | 16   | 9    | 13             |
| Scarlet fever           | 28   | 12   | 24             |
| Whooping cough          | 64   | 51   | 170            |
| Diphtheria              | 4    | 6    | 11             |
| Tetanus                 | 5    | 1    | 5              |
| Tuberculosis            | 284  | 203  | 253            |
| Tularemia               | 2    | 0    | 1              |
| Amebic dysentery        | 2    | 1    | 2              |
| Malaria                 | 5    | 5    | 29             |
| Influenza               | 362  | 95   | 61             |
| Smallpox                | 0    | 0    | 0              |
| Measles                 | 1963 | 819  | 428            |
| Poliomyelitis           | 1    | 23   | 13             |
| Encephalitis            | 5    | 1    | 0              |
| Chickenpox              | 281  | 77   | 73             |
| Typhus fever            | 0    | 2    | 23             |
| Mumps                   | 320  | 159  | 108            |
| Cancer                  | 489  | 438  | 255            |
| Pellagra                | 1    | 7    | 3              |
| Pneumonia               | 349  | 159  | 131            |
| Syphilis                | 331  | 442  | 1202           |
| Chancroid               | 8    | 12   | 17             |
| Gonorrhea               | 385  | 389  | 594            |
| Rabies—Human cases      | 0    | 0    | 0              |
| Positive animal heads   | 47   | 32   | 0              |

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

## BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

### A REVIEW OF THE TYPHUS FEVER SITUATION IN ALABAMA

Contributed by

G. R. Wright, B. S., M. S.

Public Health Engineer

At the time of preparation of this article endemic typhus fever appears to be at its lowest rate since 1927, when 69 cases were reported. During 1951 only 51 cases were reported, and only 9 cases have been officially reported thus far in 1952. This phenomenal record is believed to have been attained through the application and practice of specific scientific measures involving insect and rodent control, and is probably the culmination of years of effort by public health agencies and other interested personnel.

Typhus fever was first recognized in Alabama in 1922, when eleven cases were reported. Intensive studies were made relative to the disease, with definite conclusions being formed which made the rat responsible as the host for typhus fever and the oriental rat flea as the transmitter from rat to man. It was the consensus of those closely connected with this work and other well informed persons that these findings indi-

cated that the control of the disease was essentially a question of rat control. Since no effective, practical insecticide had been developed at that time, little consideration was given to control of the rat flea.

From 1922 to 1932, cases continued to be reported in Alabama, with an average of 60 to 80 cases being recognized each year. In 1932 there was a very sharp increase in the incidence. This increase continued the following year when, with 823 reported cases, the disease reached such proportion as to become a serious public health problem. Control work was begun in 1933 in many of the towns in southern and southeastern Alabama by the inauguration of rat control programs. These programs consisted of trapping or poisoning or a combination of both. Following these local efforts a more widespread program was made possible by the Civil Works Administration. The latter was a serious attempt at rat destruction and was undertaken in some twenty-one counties. It was the belief of the authorities at that time that typhus fever had secured such a firm foothold in Alabama as to warrant a continuous control program. A tentative program was designed to conduct surveys of selected communities to ascertain facts regarding rat harborage and degree of infestation and similar surveys throughout the state in an effort to obtain a cross section of the problem. Plans were to be drawn for corrective measures, including a well organized educational campaign.

The years that followed found typhus running its course throughout the state and responding in a satisfactory manner to the control measures which were imposed upon it. Unfortunately, federal aid in the form of field personnel was withdrawn and again in 1944 this dread disease had reached a new high of 892 reported cases. It was evident that failure to provide adequate programs had allowed typhus to establish itself again as one of the leading health problems in our state and in several southeastern states.

Following a survey by the U. S. Public Health Service of the number of cases reported during the period 1940 to 1944 inclusive, Alabama was designated as one of the states eligible to participate in a control program based upon the application of 10% DDT dust as an insecticide to control the rat flea and thereby break the chain of transmission of typhus from rat to man. Federal funds were allocated to provide supervision,



transportation, DDT powder, and equipment for its distribution. Local participation included labor, poisoning material, and hydrocyanic acid gas for gassing burrows and harborage. From the date of inauguration of this program in 1946 through 1951 our records show the following: 563,333 premises treated; 1,840,502 pounds DDT applied; 298,970 pounds poison bait distributed; 61,628 pounds cyanogas used; 162,256 pints arsenic water released; 327,020 county man hours and 206,939 USPHS man hours required. This material has been used in numerous county-wide programs and in approximately 125 annual city campaigns. Every consideration has been given to establishing this program as an integrated function of the agency concerned, and a continuous effort has been made to stimulate the individual in such manner that he would be willing to accept his responsibility in connection with rodent control.

Biologic surveys were conducted in connection with the entire program, and in 1951 a special effort was made to determine the remaining endemic areas in the state and the foci of typhus in the rat population. Although this phase of the program has not been completed, significant facts have been obtained. In Mobile 22,000 traps were set obtaining only 138 rats. Seventeen premises were found to be infested with the rat flea but no positive rats were caught. A similar program in Birmingham using 26,000 traps catching 298 rats with only four establishments being infested gave additional proof to the value of a continuous typhus control program. Six counties in western Alabama with a total of 24 cities were trapped with only three of the municipalities having positive rats and fleas. A very slight amount of rat infestation was found in the remaining cities. Selected areas in southeastern Alabama were surveyed also, with four counties having a comparatively high rate of typhus. This is attributed to the fact that these counties have not participated in a continuous control program as conducted by their neighboring counties. Recently it was determined in one city that about 75% of the rats examined had typhus fever. Other known foci continue to exist although reports of human typhus are not being received. Undoubtedly, the development of numerous antibiotics is a contributing factor. A thorough study of these and other biologic surveys indicates that it is possible for typhus fever to be practically eliminat-

ed in the rat and that rats and their fleas may be suppressed to such a low degree that the probability of contracting typhus will be reduced to a minimum.

It is considered unfortunate that again federal aid is being withdrawn and state personnel will be limited to the extent that participation in field operation must be discontinued. The decision as to rat and typhus control will be a matter for county and city consideration. Many of the established programs will be continued with technical supervision being furnished from the Bureau of Sanitation. Other programs will probably be combined with other insect control activities. There remains, then, those counties that have not participated in a continuous program to the extent of bringing typhus under control and the known foci that will present a problem for the future and will influence the elimination or reestablishment of typhus fever in Alabama.

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**Internal Biliary Fistula**—Cholecystoduodenal fistulas are typically accompanied by epigastric and right upper quadrant pain, which may be protracted and severe, and by recurrent bouts of cholangitis as a result of passage of duodenal contents into the biliary system. In some cases, ulceration of an unusually large stone from the gallbladder into the duodenum may be followed not only by the establishment of a fistula but by gallstone ileus, or acute mechanical intestinal obstruction from a stone impacted in the jejunum or ileum. In general, if the stone is passed into the duodenum, the fistula is likely to heal spontaneously, although if the common bile duct is obstructed, the fistula will necessarily remain open, to permit drainage of bile into the intestinal tract.

Formation of a cholecystocholedochal fistula by ulceration of a small stone in the cystic duct or ampulla of the gallbladder into the common bile duct is characteristically followed by recurrent attacks of obstructive jaundice, with or without pain and cholangitis. As a rule, there are no symptoms characteristic of this type of fistula which serve to distinguish it from chronic cholecystitis with recurrent obstruction of the common bile duct by stone or by inflammatory stricture. Usually, the symptoms are severe and of long duration.

Sometimes the presence of internal biliary fistula can be diagnosed on roentgen examination. While in most instances cholecystography will show simply a nonfunctioning gallbladder, gas may be noted in the gallbladder if a fistula is present between this organ and a portion of the gastrointestinal tract. Reflux of barium into the gallbladder and biliary ducts following a barium meal similarly indicates the presence of such a fistula, most commonly located in the duodenum, but occasionally occurring in the stomach.—*Ilgenfritz, New Orleans M. & S. J., July '52.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR APRIL 1952, AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                           | Number<br>Registered<br>During<br>April 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|---|--|-------|---------|--------------------------|-------|-------|
|   | Total  | White | Colored | 1952                     | 1951  | 1950  |
| Total live births   | 5927   |       |         | 23.0                     | 25.5  | 22.9  |
| Total stillbirths   | 155  |       |         | 25.5                     | 30.6  | 28.3  |
| Deaths, stillbirths<br>excluded   | 2247   | 1323  | 924     | 8.7                      | 8.8   | 9.1   |
| Infant deaths:  |  |       |         |                          |       |       |
| under one year  | 241  | 123   | 118     | 40.7                     | 32.0  | 41.2  |
| under one month   | 156  | 80    | 76      | 26.3                     | 22.5  | 28.0  |
| Causes of Death   |  |       |         |                          |       |       |
| Tuberculosis, 001-019   | 62   | 27    | 35      | 24.1                     | 24.3  | 17.8  |
| Syphilis, 020-029   | 14   | 4     | 10      | 5.4                      | 6.3   | 5.9   |
| Dysentery, 045-048  | 2  |       | 2       | 0.8                      | 0.8   | 2.0   |
| Diphtheria, 055   | 1  |       | 1       | 0.4                      |       |       |
| Whooping cough, 056   | 1  |       | 1       | 0.4                      | 3.1   | 1.6   |
| Meningococcal infec-<br>tions, 057  | 1  | 1     |         | 0.4                      | 1.2   |       |
| Poliomyelitis, 080, 081   | 2  | 1     | 1       | 0.8                      | 0.4   |       |
| Encephalitis, 082, 083  | 1  | 1     |         | 0.4                      |       |       |
| Measles, 085  | 9  | 5     | 4       | 3.5                      | 1.6   | 1.2   |
| Malaria, 110-117  |  |       |         |                          |       | 0.8   |
| Malignant neoplasms,<br>140-205   | 200  | 146   | 54      | 77.8                     | 77.2  | 96.7  |
| Diabetes mellitus, 260  | 19   | 13    | 6       | 7.4                      | 9.4   | 11.5  |
| Pellagra, 281   | 6  | 2     | 4       | 2.3                      | 1.6   | 0.4   |
| Vascular lesions of<br>central nervous sys-<br>tem, 330-334                 | 261  | 144   | 117     | 101.5                    | 120.0 | 97.1  |
| Other diseases of ner-<br>vous system, 300-318,<br>340-398                  | 32   | 14    | 18      | 12.4                     | 9.8   | 14.3  |
| Rheumatic fever,<br>400-402   | 4  | 3     | 1       | 1.6                      | 1.2   | 1.2   |
| Diseases of the heart,<br>410-443   | 708  | 447   | 261     | 275.4                    | 267.0 | 283.8 |
| Diseases of the arte-<br>ries, 450-456                                      | 32   | 21    | 11      | 12.4                     | 9.4   | 10.7  |
| Other diseases of the<br>circulatory system,<br>444-447, 460-468            | 42   | 21    | 21      | 16.3                     | 10.2  | 12.3  |
| Influenza, 480-483  | 30   | 14    | 16      | 11.7                     | 26.3  | 16.2  |
| Pneumonia, 490-493  | 87   | 45    | 42      | 33.8                     | 47.0  | 43.2  |
| Bronchitis, 500-502   | 5  | 3     | 2       | 1.9                      | 1.6   |       |
| Appendicitis, 550-553   | 2  | 1     | 1       | 0.8                      | 0.8   | 1.2   |
| Intestinal obstruction<br>and hernia, 560, 561,<br>570                      | 12   | 5     | 7       | 4.7                      | 3.1   | 2.0   |
| Gastro-enteritis and<br>colitis (under 2),<br>571.0, 764                    | 6  | 3     | 3       | 2.3                      | 3.5   | 3.2   |
| Cirrhosis of liver, 581   | 11   | 8     | 3       | 4.3                      | 5.9   | 4.0   |
| Diseases of pregnancy<br>and childbirth,<br>640-689                         | 5  | 3     | 2       | 8.2                      | 17.9  | 15.2  |
| Sepsis of pregnancy<br>and childbirth, 640,<br>641, 645.1, 681, 682,<br>684 |  |       |         |                          | 3.0   | 3.4   |
| Congenital malforma-<br>tions, 750-759                                      | 28   | 22    | 6       | 4.7                      | 3.8   | 3.5   |
| Accidental deaths,<br>total, 800-962  | 147  | 109   | 38      | 57.2                     | 56.1  | 64.6  |
| Motor vehicle acci-<br>dents, 810-835, 960                                  | 48   | 36    | 12      | 18.7                     | 28.6  | 26.6  |
| All other defined<br>causes   | 384  | 223   | 161     | 149.3                    | 143.1 | 162.1 |
| Ill-defined and un-<br>known causes, 780,<br>793, 795                       | 133  | 37    | 96      | 51.7                     | 37.2  | 48.0  |

**Peptic Ulcer**—The pattern of peptic ulcer disease, which culminates in the complications that unequivocally are indications for surgery, are perforation, hemorrhage, obstruction, and painful ulceration.

Perforation is the penetration of an ulcer into the free peritoneal cavity producing signs and symptoms of an acute abdomen. This is considered a surgical emergency and conservative management should not be practiced. Following closure, a single perforation is not an indication for definitive surgery, for it may be a meaningless accident in duodenal ulcer disease that will never occur again. However, if symptoms of activity return following a perforation, then definitive surgery should be carried out without delay.

Hemorrhage, by contrast, varies from a single tarry stool to an exsanguinating hematemesis or melena. Hemorrhage in this article connotes the rapid loss of enough blood to have obvious constitutional effects. It is a quantitative problem that requires close cooperation between clinician and surgeon. This medicosurgical team must follow the patients from their admission to the hospital through their entire course of treatment. Sufficient blood is given without regard to quantity to replace what blood is lost and to alleviate shock as soon as possible. The controlling idea is to avoid depletion and tissue anoxia. If bleeding does not stop, then operation is necessary.

Obstruction, partial or complete, due to secondary spasm or edema is a complication connoting acute activity, whereas obstruction due to cicatricial tissue is a late result of an old organic disease that has lost its activity long ago and is now the end result of previous disease. Medical management offers no hope in altering this process. Operative correction is the only means available for relieving it.

Painful ulceration is a relative problem and is most difficult to classify and to correlate with clinical symptoms and extent of existing disease. Into this group of complications fall the greatest number of patients and whether or not definitive surgery should be carried out depends upon the per cent failures in the experience of the general practitioner, the internist, or surgeon by their mode of attack. The great pitfall of false security in nonsurgical management lies in the control of a peptic ulcer under hospital conditions that cannot be duplicated when the same patient returns to the environment of his home, family, or business. The criteria of successful nonsurgical management lie in the patient being symptom free in the environment that has caused the stress. The word "intractable" when applied to this complication implies one of two entities: intractable pain or intractable ulcer. It is a strong word denoting failure in nonsurgical management.—*Kline, South. M. J., August '52.*

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the April report of the years specified.



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AMERICAN MEDICAL ASSOCIATION NEWS

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**WARNS AGAINST SOCIALIZATION HERE BY  
INTERNATIONAL TREATY**

Socialized medicine, beaten off at least temporarily in Congress, threatens the United States through an international approach, the Journal of the American Medical Association warned in its August 23 issue.

Through the "wholesale approval of treaties, conventions and executive agreements," United States representatives to the International Labor Organization, an adjunct to United Nations, have placed not only American medicine but our national sovereignty and our Constitution in jeopardy, the Journal said.

"Socialism by treaty is now a greater threat than socialism by domestic legislation, principally because the possibility of political and economic regimentation from an external source is not widely recognized," the publication said editorially.

In an accompanying report of the A. M. A. Committee on Legislation, it was pointed out that "it is extremely important that everyone understand the fact that a treaty, once ratified and in force in the United States, automatically becomes a part of municipal law, a fact that is not generally true in other countries."

The committee also stressed that "the country as a whole must realize more than it has in the past that the treaty method of making law lacks the safeguards that exist under its constitutional method of legislating."

It was pointed out in the Journal that the I. L. O., which started out in 1919 as an adjunct to the League of Nations to frame international labor conventions (treaties), now has broadened its aims to cover all-out social security, including "comprehensive medical care." The United States has ratified this extension.

The I. L. O. is an association of 65 countries. The membership is made up of 22 European countries, 20 American, 19 Asian and Far Eastern, and four African, with the result that the American nations are outnumbered more than two to one.

Each nation has four representatives to the I. L. O.—two government, one labor and one employer. The American delegation, the A. M. A. Committee on Legislation stated, "operates like a stacked deck," adding:

"On 27 major votes in three years, the United States government delegates teamed with the labor delegates 24 times to outvote the delegate representing management."

That situation, the Journal reported, existed last June when the I. L. O., meeting in Geneva, adopted a covenant, entitled "Minimum Standards of Social Security," envisioning nine social security benefits—medical care, sickness, unemployment, old age, employment injury, family allowances, maternity, invalid, and survivors'. The American delegation voted three to one for the covenant.

"While the medical benefits in the covenant are carefully distributed through the document, considered together they constitute 'socialized medicine'," the Journal added.

The Committee on Legislation said the constitutional amendments have been suggested as safeguards against the prevention of abuses through international treaties. Those recommended included (1) a provision that treaties that conflict with the United States Constitution are invalid, and (2) that any treaty interfering with domestic legislative jurisdiction is invalid, except when the subject matter presents an international problem requiring international action.

Among other safeguards proposed were that specialized agencies affiliated with the United Nations be prohibited from intervening in the domestic affairs of member governments, and that United States representatives refuse to vote to submit for ratification proposed treaties encroaching on domestic legislation.

The Journal said the information was being presented for "all who are interested in the prevention of the deterioration of medical care through domination by the federal government."

### NEW DRUG EFFECTIVE IN PREVENTING MALARIA RELAPSE

The outlook for the complete elimination of relapses of malaria is very promising as a result of the development of a new drug—primaquine.

It has been possible to reduce the relapse rate of Korean malaria from about 30 per cent to less than one per cent by the use of the war-developed drug, according to preliminary reports in the August 23 Journal of the American Medical Association.

Together with chloroquine, an agent which is effective in the blood phases of malaria, primaquine "will produce radical cure of Korean vivax malaria, in most persons, by destroying the tissue phases of the parasite," the Journal said editorially.

Malaria is transmitted by the bite of the Anopheles mosquito. The offending parasite of malaria in Korea is Plasmodium vivax. Shortly after the parasite is introduced into man by a mosquito bite, it disappears from the blood and enters the tissues. Some time within the first week of infection, the tissue forms give rise to the easily recognizable blood stages which usually are the only forms capable of producing symptoms.

In the case of P. vivax, a persistent tissue stage develops which, by giving off broods of blood forms at intervals, accounts for the periodic relapses of vivax malaria.

Before the use of the new drug, one of the problems of returning Korean veterans was that malaria, effectively suppressed in the blood by chloroquine overseas, frequently redeveloped when the soldiers discontinued treatment after reaching home.

Because primaquine is relatively ineffective in destroying the blood stages of the parasite, the drug should be used in combination with chloroquine in acute attacks of vivax malaria, the Journal said. In the recommended dosage, no significant toxicity is to be expected, it was pointed out.

The Journal also carried reports on four studies of the use of drugs in the control of malaria, prepared by civilian, Army and U. S. Public Health Service physicians for the A. M. A.'s Council on Pharmacy and Chemistry. These studies confirmed the effectiveness of primaquine.

Primaquine, the common name for a compound with more than 40 letters in its chemical designation, was synthesized at Colum-

bia University, New York, during the World War II antimalarial campaign. It was tried out in extensive animal studies at Christ Hospital, Cincinnati.

Prisoners at the Illinois State Penitentiary at Stateville and the Federal Penitentiary at Atlanta voluntarily lent themselves to malarial infection in order to test the effectiveness of the new drug. It was then used in actual field trials on natives in Nicaraguan jungles.

The administration of the drug to veterans was started in the summer of 1951, after a large number of returned Korean veterans had come down with malaria. Primaquine is now available only in military installations.

The Journal pointed out that a final evaluation of the therapeutic studies will not be possible until the fall of 1952.

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### DESCRIBES NEW METHOD FOR WEIGHING BEDRIDDEN PATIENTS

A simple apparatus for weighing patients who are confined to bed was described in the August 30 Journal of the American Medical Association. Weight changes are important factors in many medical cases.

In an article written by Dr. John V. Gagliani, of the Hospital for Women and Children, San Francisco, the apparatus was described as a lifting lever and scales hung over the patient's bed from any type of overhead frame.

A lifting board, a 2 x 6 foot sheet of  $\frac{3}{4}$  inch plywood, is slid under the patient, and four lifting wires are attached to the corners of the board by snap hooks. The weighing apparatus with the patient is raised an inch or two above the bed and the weight determined, he stated, adding:

"This apparatus has been found to be inexpensive, easily constructed, and accurate and safe in operation. It was built in the maintenance shop of a hospital and required only materials readily available."

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### REPORT LONGEVITY OF PATIENTS WITH HIGH BLOOD PRESSURE

Patients with benign essential hypertension, a high blood pressure condition of long standing and unknown cause, may live a long and effective life, according to a study made by two Boston physicians. It has been



estimated that most of the high blood pressure cases fall into that classification.

The conclusion was based on an observation of 100 cases followed personally by Drs. James P. O'Hare and Robert B. Holden of the Peter Bent Brigham Hospital over periods ranging from 10 to 34 years, with an average of more than 17 years. Their report was published in the August 16 Journal of the American Medical Association.

The Boston doctors said that of the 100 patients, 47 are in "good" condition, 19 in a "fair" state of health and only five in "poor" condition. Twenty-nine deaths have occurred, the main causes being brain hemorrhages, blood clots and heart failure, complications which usually developed late in the disease.

There were 67 women and 33 men in the series, and this predominance of women may account for the longevity and generally favorable course, the doctors explained. They pointed out that it is generally agreed that women as a class withstand hypertension better than do men. The average age at onset of the disease was 45 years.

Knowledge of the good prospects for such patients should help to avoid creating "blood pressure neurotics," the Boston physicians concluded.

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#### SOFT BREAD NOT NECESSARILY FRESH

Use of chemical bread softeners makes it possible to fool the average consumer because softness and freshness are closely related in the minds of most people, according to Dr. James R. Wilson, secretary of the Council on Foods and Nutrition of the American Medical Association.

When buying a loaf of bread, the average consumer prefers one that is soft, Dr. Wilson wrote in the current *Today's Health*, published by the A. M. A. Few persons ever have heard of chemical bread softeners, which have not been proved unquestionably safe, he added.

The council views the use of the chemical bread softeners with considerable apprehension, Dr. Wilson stated, adding:

"Available knowledge of the possible toxicity of these substances is fragmentary; particularly is evidence lacking as to chronic toxicity. The employment of these agents in the processing of such basic foods as bread and bakery goods, as well as other

foods, such as ice cream, candy and peanut butter, could lead to the ingestion of considerable quantities of these materials of uncertain toxicologic action.

"Unless the complete harmlessness of these agents can be demonstrated beyond reasonable doubt, they should not, in the council's opinion, be employed in basic foods."

A report in the Federal Register, an official United States publication, stated that "there was evidence tending to show that some of the polyoxyethylene monostearate prepared for food use contained small amounts of poisonous glycols," Dr. Wilson pointed out.

The American Bakers Association and the American Institute of Baking recently have adopted a statement of principles about the use of such chemicals in bakery products, Dr. Wilson said. Their statement demands that such ingredients be proved completely safe before use.

In addition, the Food and Drug Administration of the federal government recently formulated new federal standards for five different kinds of commonly used breads, and banned the use of certain chemical bread softeners. The rulings have been held in abeyance pending an appeal to the U. S. Court of Appeals by one of the manufacturers of such compounds, according to Dr. Wilson.

Dr. Wilson quoted the Register as stating bread softeners were extensively used by bakers shortly after World War II to make their bread appear fresh and to cut down costs of production, as the chemical compound effectively substituted for the eggs and fats previously used to give softness to bread.

Furthermore, Dr. Wilson added, the chemicals which keep bread appearing fresh make possible the practice of "bread rolling" by unscrupulous route salesmen. "Bread rolling" consists of picking up old bread at one store and delivering it as fresh bread to another, a practice condemned by all reputable route men and employers.

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Tuberculosis is a communicable disease that can be prevented. The practicing physician, by active participation, stands in the front ranks in the ultimate conquest and total eradication of this disease.—E. A. Piszczek, M. D., *Illinois M. J.*, March 1952.

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## MEDICAL AND SURGICAL TREATMENT FOR PARTURITIONAL HEMORRHAGE

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While preparing this composition, the incongruity of lumping together the three most important causes of parturitional bleeding occurred to me. As I considered the matter, the illogical association became more provoking. In the first place they—meaning abruption or separation of the normally implanted placenta, placenta previa and uterine rupture—are by no means the only causes of vaginal bleeding in late pregnancy or during parturition. Bleeding will occur from or in association with cervical papillomas and cancer, fibroids, the marginal placental vein, succenturiate lobes, low segment decidual tears with onset of labor as the presenting membranes separate, and vulval and vaginal varices. It will also occur postpartum per primum for no obvious or eventually discoverable cause in association with so-called uterine atony. Moreover, the symptom of bleeding is the only one necessarily common to these really bad complications, and in abruption and uterine rupture it may be minimal or absent as a manifest symptom. Further, the major causes of bleeding differ in etiology, pathology, incidence, concurrence with other gestational pathology, and relationship to previous medical or surgical history. Except for the therapy of blood loss, the urgency of treatment and the application and manner of surgical measures are generally widely divergent. Although postpartum bleeding of severity may be associated with any of the three, the causative pathology

and clinical approach for the most part are distinct and different.

So why do we talk of abruption, placenta previa and rupture of the uterus as if they possessed the relationship they do not? Why group them at all, or present contrasting data with reference to incidence, therapy and results? Rational reasons may not be found, but reasons there are which, as we shall see, might to some extent justify the old liaison.

Bleeding could have many sources but, first, it is almost *always* a sign of a pathologic complication when it occurs in late pregnancy. One exception is a heavy show which may come from bleeding decidua as early labor separates the membranes from the lower segment at the cervix. Another is postpartum hemorrhage from a uterus functionally and not pathologically disturbed. Second, ante- and intrapartum bleeding generally means abruption, placenta previa or uterine rupture, in that order of probability. Third, bleeding gives no diagnosis but is an immediate reminder that one of the three, all serious, is presumably present and blood replacement must be anticipated. Fourth, it means that a positive and immediate diagnosis must be established before other signs appear or an impending threat becomes real. The bleeding in itself is non-revealing as to cause but when apparent demands explanation.

Such practical considerations comprise the only excuse for associating these entities in one discussion. Since bleeding may progress into gross blood loss with no warning interval and since the only effect on the patient's economy will depend upon her hematologic status when it begins, the patient's

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Read before the Association in annual session, Montgomery, April 18, 1952.



protective care starts when she is first seen. Her blood type, Rh factor and, if negative, that of her husband also, hemoglobin and blood count must be determined at the first visit. If normal, the blood count and hemoglobin need be repeated at mid-pregnancy and at the eighth month. Only by knowing the blood count and hemoglobin early in pregnancy can one appreciate the patient's maintenance of a normal level consistent with the physiologic hydremia of advancing pregnancy. Obviously, a severely anemic patient will tolerate blood loss far less well than one in balance, and if the blood picture prior to a bleeding accident is unknown, the interpretations and therapeutic requirements are difficult to assess. Likewise, appreciation of previous blood pressure and circulatory findings aid in evaluating the effect and amount of blood loss. Adaptive changes in heart rate and blood pressure, if recorded as they should be, aid in estimation of amount and effect of hemorrhage. Some patients habitually run a rapid pulse, or will do so under any excitation. A systolic blood pressure of 80 to 100 may mean little in a bleeding patient whose pressure rarely exceeds 100, but portends impending shock in another with a usual reading of 160.

The physician should also note in his first examination the venous pattern of the arms. While a veiny person in shock may not be transfused easily, one with poor veins can be a real headache.

The management of the bleeding case will depend in timing and type upon the cause. We have seen painless bleeding with abruptions and painful contractions with placenta previa, so no hurried opinion in the early bleeding case is acceptable. There is time enough to fix the diagnosis while blood replacement is readied. The condition of the mother and baby is appraised, a general and abdominal examination made, and a speculum used to visualize the cervix. No rectal or vaginal digital examinations are done. Any other complications which might compromise the patient's chances of recovery are noted. The differential diagnosis is helped by considering the placement of the fetal pole, whether or not the presenting part is engaged, floating heads in primiparae at term, and x-ray for the placental site and normality of the fetus. If placenta previa is present, no manual vaginal examination is made unless the patient is at term, and then

only in the readied operating room. Vaginal palpation for the placenta through the thin lower segment is always safer and almost as satisfactory as through the os. The majority of cases are nearly self-revealing as to cause of bleeding, but the painless bleeding found with some early abruptions, and which simulates placenta previa, must be remembered. Often these progress swiftly and with little warning to the fulminant type. Pain in some degree generally appears with abruption as a result of uterine irritation with local myometrial spasm and fractionation through hemoinfiltration. The element of shock from the latter may well outstrip that caused by blood loss. Estimation of blood loss is notably inaccurate, and particularly so with abruptions since it may be partly or completely concealed. The degree of abruption found will often depend upon the time interval between onset of symptoms and delivery of fetus, and this fact more than any other alters and individualizes the treatment. Whereas the bleeding from placenta previa may stop for days or weeks, that from abruption continues or progresses until delivery. With the former, inactivity and blood replacement are the urgent needs whereas, with abruption, termination of the pregnancy itself is required.

Inasmuch as placenta previa and abruption (or for the long-winded, premature separation of the normally implanted placenta) comprise numerically the most important of the hemorrhagic complications of pregnancy, a comparison of results of treatment of placenta previa in the first and second decades of our clinic is of interest. Cesarean incidence rose from 30 to 60 per cent with a loss of four patients during the twenty years. In this ten-year series we treated 339 cases of placenta previa, of which 207 or 61 per cent were delivered by cesarean section. There were two deaths in the entire group or a mortality of 0.6 per cent. One of these was a placenta previa accreta and succumbed after a subsequent hysterectomy. It has been noted from our data that placenta previa bleeding accounts for only 25 per cent of all of our antepartum and intrapartum hemorrhages, while abruption causes 75 per cent.

Posting the treatment of placenta previa according to various types is absurd. A so-called central or complete previa in a multipara may be partial or incomplete after an hour of labor. A finger in the os can be of

no help unless the operator is willing to gamble with a blood flood. Mortality is due to blood loss irrespective of where and how much of the placental tissue encroaches upon the closed, partly opened, or fully dilated cervix. Any vaginal manipulations depend upon parity and condition of the cervix when the *bleeding occurs*, not upon how much placenta presents. The only practical point in differentiating types is that palpable placental tissue clearly indicates the *cause* of the bleeding, and eliminates consideration of other bleeding entities which may cause confusion. But always remember that if patients with placenta previa die, they die because of the blood lost, not because of their parity, the condition of the cervix, the size of the baby, nor how much or how little placenta a poking finger can dislodge. They will also die if they are hurried into an operation for which they are not prepared and which most likely is not at all urgent. Most of the first bleeding of placenta previa will stop of itself, unless labor is active. Of first consideration then is the amount of blood lost and the gestation time. Repeated transfusions may salvage a premature baby by withholding termination of the pregnancy for a few weeks or more. With the patient at term, her parity and previous birth experience, the size and condition of the baby, and relevant obstetric or medical complications influence judgment.

You have seen that 61 per cent of our placenta previa patients are delivered by cesarean section. The other 39 per cent are allowed to deliver vaginally after rupture of membranes, intravenous Pitocin drip, and, with some, scalp traction with a Willett forceps. We do not pack and practically never bag a patient. Vaginal packing is *never* more than a delaying action while replacing blood and preparing for sections. Methods such as Braxton Hicks or internal podalic version are unforgivable and murderous. The results are so bad that these maneuvers should be wiped from the books. It is our opinion that all deaths from placenta previa are inexcusable since they are preventable.

With abruption of the placenta there is posed an entirely different problem. The revealed blood loss may be great or small, or it may be absent. The picture of shock varies from none to profound and is often irreconcilable with the amount of blood lost. Toxemia of pregnancy and degenerative vascular disease are frequent and important factors

in the majority of the severe cases and almost all of the fatal ones. (All of ours.) The pathology is not stayed by transfusion, but is either persistent or progressive, with a loss of half of the babies who succumb to the hypoxia which placental separation induces. The detached area may be small and increase gradually, or the separation may be completed almost instantly. A considerable number appear with or initiate labor, remain as incomplete abruptions with various sized retroplacental clots, and are associated with rapid and relatively uneventful delivery. The occult blood loss is variable, and the uterine pain and tonicity largely are related to myometrial infiltration with blood. A decision as to manner of delivery must be made without delay. What methods may we use?

In a previously reported series, we delivered by cesarean section 60 or 29 per cent in a total group of 236. In this 10-year review of 995 diagnosed abruptions of various degrees, 141 or 14 per cent were delivered by section with the loss of one patient (0.7 per cent) in 1945. This figure assumes its proper importance when it is recalled that cesarean operation is almost always used for the worst cases, the incidence then exceeding 50 per cent. Vaginal and cervical packing, the abdominal binder, and the Spanish windlass are antiquated, indefinite, and generally ineffective and deceiving. Our operative treatment consists either in rupture of membranes, often followed with intravenous dilute Pitocin, or cesarean section. Blood loss and shock are treated by transfusions, oxygen, cortical extract and Demerol with atropine. Barbiturates, morphine, and stimulants are withheld. If the element of shock is dominant and the blood loss moderate, plasma may be needed rather than blood. The severe renal shutdowns from cortical necrosis or lower nephron nephrosis occur mainly where shock has been severe and prolonged, hence the need for prompt restorative therapy. Loading down these shocked patients with blankets, bottles and short circuits is fruitless, makes proper treatment more difficult, and obscures early evidence of returning vasomotor stability. External heat is required only if the body temperature is definitely lowered.

It is in this group of patients that one occasionally encounters uncontrollable bleeding due to blood rendered incoagulable through loss of circulating fibrinogen. These



contribute heavily to the mortality list and encourage widespread interstitial hemorrhages. The manner of fibrinogen depletion, still obscure and debatable, is presumed to be due to action of a fibrinolytic enzyme or escape into the maternal circulation of placental thromboplastin, with resulting afibrinogenemia. In two of our more recent cases, there was no clot in six hours in one and thirty-six hours in another. This contingency must be recognized and treated by blood transfusion or, better, administering 2000 to 5000 or more milligrams of fibrinogen. I have already remarked that no inept or untrained person should carry out these procedures in bad risk cases, with loss of invaluable time, the sacrifice of much needed veins, and hematomas scattered from biceps to ankle. The blood bank is alerted in all cases, suspect or active, especially where a negative Rh factor complicates B or AB blood. Far more blood must be readied than the most generous estimate of needs. The heroics of a last minute blood harvest are better movie material than hospital practice. "Blood on hand" should be a placard motto to go to the operating room with every bleeding patient. Plasma substitutes hold the blood volume until suitable blood is ready. When veins are hard to find, a needle in the femoral vein or a Tocantin needle in the sternum are preferable to time wasting and often ineffectual stabs and cut downs. And remember always that a few pints of blood are easier to get and pay for than the cheapest funeral.

While inversion of the uterus, vasa previa, placenta accreta and rupture of the marginal vein contribute their share to any group of bleeding cases, postpartum hemorrhage is by far the most common and lethal. *Early postpartum hemorrhage* is due in general to mismanagement of the third stage of labor. First of all, no placenta should be left in utero if there is bleeding. No patient should be returned to bed with the placenta undelivered. If placental delivery is not effected within 15 to 20 minutes, it should be removed manually. There is today no danger if proper draping and position, Septisol soap and antibiotics are used. The greater danger is through loss of blood and therefore lessened resistance to infection. Following manual removal, the cervix, lower segment and fundus are always inspected for damage and to insure the complete extraction of all placental and membranous tissue.

Postpartum hemorrhage is effectively prevented in the following manner. With the placenta removed, the uterus is withdrawn from the pelvis, the lower segment compressed against the promontory, and the corpus gently massaged without, however, forcibly disgoring the physiologic clots which have formed. Thus there is evoked sufficient myometrial contraction to keep the spiral and tortuous uterine vessels compressed and the uteroplacental vessels effectively thrombosed. The more common and hemorrhage-provoking technic is to frequently and forcefully massage, squeeze and maul the corpus so that the initial contractions are followed by long periods of relaxation. The physiologic clots are forced from the uteroplacental site and the now inert and relaxed uterus bleeds freely once more from the opened vessels. I am sure that such grossly unskilled demonstration of third stage ignorance accounts for much of our 1.4 per cent incidence of hemorrhage, which is far too high.

*Late postpartum hemorrhage*, occurring from hours to days or weeks after completion of the third stage, is due to (1) retention of placental tissue, placenta succenturiate or membranes, (2) failure of involution at the placental site with secondary infection and bleeding from the thrombophlebitic vessels, and (3) persistence of the decidua vera with delayed and hemorrhagic desquamation. By far the most common cause—about 80 per cent—is the first one.

The failure of the uterus to stop bleeding in any of these circumstances may produce a rapidly developing crisis. If the blood is not coagulable, it must be made so. An intravenous oxytocic—the best is intravenous Pitocin by drip—is promptly given for atony. The uterus must be clean of gestation products. Intrauterine Oxycel packing is of value only if the blood will clot, and it must be sufficient in amount to contact all of the intrauterine wall. Blood must be transfused forcibly until the blood pressure reaches 100, using large needles of 15 to 18 gauge. There should be kept on hand for emergencies Type O Rh negative citrated whole blood, prepared with the Witebsky blood group specific substance. The latter eliminates anti-A and anti-B factors, and this processed blood can be used in any emergency.

On rare occasions, massive and persistent hemorrhage makes surgery imperative. In

a young woman, the first procedure is trans-abdominal ligation of the uterine arteries, and this is almost always effective. I have successfully used artery ligation in a number of cases and in twenty years have had to perform but one hysterectomy for postpartum hemorrhage. If artery ligation fails, it has accomplished one step in the hysterectomy which must follow. During the past ten years in 1149 cases with postpartum hemorrhage we have lost two patients. In reviewing these deaths, I believe one actually was an unrecognized rupture of the uterus with exsanguinating hemorrhage rather than a postpartum hemorrhage from an uninjured uterus. The last death from postpartum hemorrhage in our clinic occurred

more than eight years ago. Several who might have died were saved by uterine artery ligation and a number of others by hysterectomy. Excluding blood dyscrasias, proper conduct of the third stage of labor should eliminate most of these harrowing cases but if they do occur, prompt and purposeful action must intervene to preserve life.

For the good of your clinic and the lives of your patients, I conclude with this: The surest and most effective way to convert good principles to good practice is to bar no holds, have no friends, and censor no remarks in discussing parturitional deaths from hemorrhage.

## APPROACH TO A GASTROINTESTINAL PROBLEM

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Gastrointestinal diseases occupy a prominent place in the general practice of medicine. Emery,<sup>1</sup> studying the incidence of gastrointestinal disorders by the relative involvement of the various bodily systems as obtained from 1,000 consecutive outpatient records of 500 surgical and 500 medical admissions to the wards of the Peter Bent Brigham Hospital and 839 cases from private practice, found that gastrointestinal diseases occupied first place in the outpatient department and the wards of this hospital and ranked second to respiratory diseases in private practice. From his work it would seem that a practitioner, who had mastered gastrointestinal diseases along with cardiovascular and genito-urinary diseases, had mastered the bulk of general practice.

A simplified classification of digestive disorders is as follows:<sup>2</sup>

1. Constitutional digestive weakness.
  - a. Organic type from congenital anomalies.
  - b. Functional type from congenital instability of the autonomic nervous system.
2. Acquired digestive diseases; i. e., infec-

tious, metabolic, toxic, traumatic and parasitic.

3. Extra-digestive disease group; i. e., cardiovascular disease, renal lesions, tuberculosis, brain tumor, syphilis, neuroses.

Kasich,<sup>3</sup> in reviewing the incidence of digestive complaints in 4,000 private patients, discovered the first ten to be abdominal pain, constipation, flatulence, belching, headache, vomiting, abdominal distension, epigastric distress, nausea, and heartburn, in that order.

In approaching a digestive problem the history is of major importance, outranking the x-ray, laboratory findings and physical examination. It has been said, and with great truth, that there is no substitute for a good history. A good history alone will probably diagnose 75 per cent of gastrointestinal problems without the aid of a physical examination, x-ray or laboratory tests.

Three of the cardinal symptoms of digestive disease are abdominal pain, nausea and vomiting. Regarding abdominal pain, if the following ten points are clearly brought out, very accurate clues are obtained leading toward a correct diagnosis: (1) Location—Is the pain localized or diffuse? Localized pain is often seen in peptic ulcer where the patient is frequently able to point with his finger to a definite spot, usually between the xyphoid and umbilicus.

Delivered before the Academy of General Practice, Jefferson County, Alabama, March 31, 1952.

The author is Assistant Professor of Medicine, Medical College of Alabama.

1. Emery, E. S., Jr.: Incidence of Gastrointestinal Disorders, *Gastroenterology* 6: 477-492, 1946.

2. Kantor and Kasich: *Handbook of Digestive Diseases*, ed. 2, p. 17, 1949.

3. *Ibid.*, p. 25.



Pain is less localized in gallbladder disease, being more diffuse in the right upper quadrant, with spread often under the right rib margin to the right subscapular region and, at times, to the supraclavicular area. Back pain at the level of the 8th to the 10th dorsal vertebra may occur in conjunction with anterior abdominal pain in duodenal ulcer. Jones<sup>4</sup> has emphasized that back pain, at times, may be the only clinical manifestation of duodenal ulcer. In esophageal lesions the pain will generally be substernal and correspond to the level of the lesion. Peptic ulceration within the esophagus, or gastritis in a hiatus hernia, may closely resemble coronary artery disease through substernal pain or tightness, with radiation to the left shoulder or arm. In general, disease of the small intestine will be localized in an area one or two inches either above or below the umbilicus. Colonic pain is usually localized at fixed points along the path of the colon as in the sigmoid region, the splenic or hepatic flexures, and often referred to points approximately in the areas involved.

(2) The duration of the pain is important whether it be of one hour or one day's duration, or, as some say, "all my life." Organic disease, of course, very seldom gives constant manifestation for years.

(3) The onset of the pain is important whether sudden, gradual, or insidious.

(4) The character of the pain as to the severity should be noted; that is, whether slight, moderate, or severe. Helpful adjectives are: "Is the pain dull, sharp, aching, piercing, boring, throbbing, or knife-like?" Does radiation take place? If so, does the pain pass superiorly, inferiorly, laterally, or posteriorly? What brings on or aggravates the pain? What relieves the pain?

(5) Are there periodic attacks, such as occur in peptic ulcer? What is the time interval between attacks? What is the state of health between attacks?

(6) Does position or movement affect the pain? A classic example of this is a duodenal ulcer penetrating into the pancreas, or a carcinoma of the pancreas, where pain is relieved by the patient's bending forward or doubling-up, in contrast to lying flat in the bed or standing when the pain in these

positions often becomes unbearable. Spondylitis, producing abdominal pain, is often a confusing point. Its characteristic feature is that the pain is aggravated when the patient is at rest and relieved when he gets up and stirs around.

(7) A change in the usual character of the pain often forebodes evil, representing frequently an extension of the process or a complication. For example, the patient with peptic ulcer who notices that his pain, instead of being intermittent, is becoming continuous and not relieved by food or alkali may be developing a perforation into the pancreas; or a benign gastric ulcer may be undergoing malignant degeneration.

(8) The relation to other digestive tract diseases should be established. The appetite, weight loss, and bowel habits should be considered.

(9) The relationship to extra-digestive tract diseases should be borne in mind, such as cardiac and renal lesions, also gynecologic and genito-urinary disturbances.

(10) Any previous medical examination should be carefully evaluated—the laboratory tests performed, x-rays taken, diagnoses of other medical groups, treatment involved, and operations and their nature, if any.

Abdominal pain and tenderness deserve further consideration. Generally speaking, viscera, even in disease, are not painful. For example, an inflamed gallbladder, a gangrenous appendix, or a section of strangulated gut may be crushed, cut, or burned without pain. On the other hand, the pancreas, mesentery, and bile ducts, also the parietal peritoneum, are sensitive to all stimuli. In acute cholecystitis and acute appendicitis, inflammation spreads to the parietal peritoneum to produce pain and muscular rigidity which are local in character pointing to disease of the adjacent organ. However, in many cases of visceral disease, pain is referred segmentally to somatic areas which may be near the source, as epigastric pain in ulcer, or distant, as supraclavicular pain in gallbladder disease. Lewis<sup>5</sup> and Kellgren<sup>6</sup> experimentally have

4. Jones, C. M.: Digestive Tract Pain: Diagnosis and Treatment, Experimental Observations, New York: Macmillan Company, 1938.

5. Lewis, T.: Pain, New York: Macmillan Company, 1942.

6. Kellgren, J. H.: On Distribution of Pain Arising from Deep Somatic Structures, with Charts of Segmental Pain Areas, Clin. Sc. 4: 35-46 (June) 1939.

clarified the problems of localization and referred distribution. By injecting 6% saline into the interspinous ligaments at various levels, they produced pains closely simulating angina pectoris, renal colic, gallstone colic, and other painful syndromes. Their conclusion was that all deep pain, both somatic and visceral, is poorly localized and diffuse. The reflex nature of referred pain in gastro-duodenal ulcer is localized, not in the skin, but in the muscles. Experimentally, procaine infiltration in the skin did not abolish the pain whereas injection into the rectus muscles did abolish it.

In general, colicky pains which appear and disappear in rhythmic waves are always visceral in origin, arising from hollow viscera or ducts. Marked pain of short duration is nearly always due to visceral disease. Chronic pain referred to the abdomen, constant for days, increased by movement or posture, may be spinal in origin.

Respiration and coughing increase referred pain from the chest to the abdomen. Visceral pain involving the peritoneum, as in peritonitis, perirenal abscess, or appendiceal abscess, may appear to be somatic, being increased by movement.

The characteristic feature of ulcer pain is its relation to circumstances within the stomach. Gastric ulcer pain tends to come about one hour after food has been taken. If no relief is obtained, it may last for an hour and then disappear. Nausea often accompanies the pain and the patient may vomit, which tends to relieve the pain. If the patient takes enough alkali, pain is usually relieved in a very few minutes. The patient with gastric ulcer cannot readily tell the effect of food on his pain since he, in most cases, has recently eaten and does not feel hungry, or perhaps he is nauseated. In some cases, however, food does relieve the pain of gastric ulcer.

The pain of duodenal ulcer usually appears two or more hours after food is ingested and will continue until the next meal when intake of food quickly relieves it. The patient with a duodenal ulcer often feels hungry with the pain; since both hunger and pain are relieved by eating, the pain is often called a "hunger pain." Seldom does the patient with duodenal ulcer become nauseated or vomit. If vomiting does occur, it relieves the pain.

The above description of gastric and duodenal ulcer pain is by no means a constant

thing, as many cases are borderline, allowing a wide range of error. Nocturnal pain is more helpful in the differential diagnosis. In gastric ulcer the patient is seldom awakened by pain after he has once fallen asleep, whereas the patient with a duodenal ulcer is frequently awakened from midnight to 4:00 a. m., with pain relieved by food or alkali if taken. The history alone will not allow for precise ulcer location even at its best. Pickering,<sup>7</sup> from his experiments and clinical observations, firmly upholds the chemical hypothesis (hydrochloric acid) as the cause of ulcer pain. However, many authorities believe that motor disturbances in the stomach or duodenum or muscular spasm in the ulcer area also contribute to the discomfort.

Another of the cardinal symptoms of digestive disease is nausea. Nausea, often the precursor of vomiting, is believed due to a disturbance in the vomiting center. Nausea is often associated with anorexia and gastric hypofunction, both of the motor and secretory types. This is evidenced in chronic gastritis, gastric cancer, the anemias, deficiency diseases, during the course of x-ray therapy, and in renal diseases. Nausea without vomiting is found in jaundice, either of the obstructive or hepatic type, chronic gastritis, gastric cancer, cardiac failure, renal disease, pulmonary tuberculosis, headaches, both of the migraine type and those due to refractory errors, vertigo such as is experienced in labyrinthine disease, and morning nausea from pregnancy.

The third cardinal symptom of digestive disease to be discussed is vomiting. A series of complex mechanisms are involved in the process of vomiting.<sup>8</sup> Initially, a change in intra-abdominal pressure is brought about by a descent and fixation of the diaphragm and a contraction of the muscles of expiration. Then the glottis closes, the pyloric segment of the stomach contracts, and at the same time relaxation of the fundus occurs. By this method the gastric content is forced upward into the fundus and peristalsis may take place, but this is probably of little significance. When the flaccid stomach is compressed as a result of the increase in intra-abdominal pressure, the cardiac sphincter is relaxed and the gastric contents are driven into the dilated esophagus. The

7. Pickering, G. W., in *Peptic Ulcer*, Sandweiss, Saunders, p. 90, 1951.

8. Bockus, H. L.: *Gastroenterology*, Saunders, Vol. I, p. 27, 1946.



gastric material is expelled at once into the mouth and some may continue to move up and down in the esophagus. The nasal cavity is shut off to block the flow of vomitus upward. At the termination of the act of vomiting, the diaphragm ascends and all of the expiratory muscles and the abdominal wall contract. When the glottis closes, the intrapulmonary pressure becomes positive, producing slight pressure on the esophagus causing it to empty its contents forward into the mouth.

The causes of vomiting are many. Organic disease of practically any organ of the body may produce vomiting. A common cause is autonomic imbalance as in psychogenic disturbances. Irritants of any sort that are toxic to the vomiting center may produce vomiting. The vomiting threshold varies quite widely in different individuals as some vomit with the greatest of ease, others with great difficulty. Any lesion affecting the path of the vagus nerve is liable to produce vomiting. The most common causes of vomiting within the gastrointestinal tract are lesions of organic disease within the stomach or small intestine. Vomiting associated with appendicitis, cholecystitis, intestinal obstruction, and peritoneal irritation is a common occurrence. In the differential diagnosis of vomiting are considered the nervous hysterical type, that produced from brain tumor, migraine, labyrinthine disease, central nervous system syphilis, nasopharyngeal catarrh, pregnancy, hyperthyroidism, alkalosis, acidosis, uremia, Addison's disease, and alcoholism.

The character of the vomitus is important. The pungent odor from a gastric secretion containing hydrochloric acid is quite in contrast to the odorless vomitus from an achlorhydric stomach. Vomitus from an esophageal pouch or a dilated esophagus proximal to a stricture or cardiospasm will not possess the pungent odor of gastric contents. Fecal odor to vomitus is noted in intestinal obstruction or gastrocolic fistula, also a long-standing pyloric or duodenal obstruction with secondary colon bacillus infection. The odor of vomitus from peritonitis is frequently fecal. The type of food within the vomitus is of importance. Vomiting occurring 1 to 2 hours after eating should be checked for the degree of chymification. There will be no evidence of chymification with gastric achlorhydria, the vomitus appearing like a mixture of recently eaten food and water.

Gastric contents containing a normal amount or excessive secretion of hydrochloric acid will show chymification occurring as evidenced by the presence of finely divided food particles. Gastric contents seen to contain food particles vomited eight or more hours after eating are due to obstruction of the pylorus at or near the stomach outlet. Obstruction below the ampulla of Vater is suggested by food residues in large amounts containing bile. Retained food may also be vomited in cases of marked cardiospasm, esophageal or gastric diverticulum, or hour-glass stomach. The vomitus may occasionally be noted to contain large amounts of pure gastric juice, especially in active duodenal ulcers with hypersecretion and associated pylorospasm. Morning mucus within the vomitus may be seen in pregnancy, chronic gastritis, and nasopharyngitis with post-nasal drip. Inflammation of the stomach or malignancy may be suspected if there is a marked increase of mucus with associated gastric stasis.

Persistent vomiting, unless due to pyloric obstruction, results eventually in the passage of bile. The vomiting of large amounts of bile associated with an obstructing lesion usually points to blockage below the ampulla of Vater.

Vomitus containing blood, whether fresh or old, from the stomach is of serious import. The most common causes are peptic ulcer and malignancy. Small amounts of fresh blood are brought forth following continuous retching. So-called coffeeground material has long been noted to be of importance and represents partially digested old blood.

The vomiting of pus is unusual and is associated with suppurative gastritis, gastric abscess, or the rupture of an extra-gastric abscess into the stomach.

Occasionally parasites, such as roundworms or hookworms, may be recovered in the vomitus. A gallstone may be vomited in association with a cholecystogastric or a cholecystoduodenal fistula. Various type foreign bodies swallowed may be regurgitated.

The time of onset of vomiting is of clinical significance. Before-breakfast vomiting suggests incipient uremia or pregnancy. A morning postnasal drip frequently initiates vomiting before breakfast. Chronic gastritis, especially that associated with alcoholism, may give rise to early morning empty-

stomach vomiting. The occurrence of vomiting soon after eating or food spitting is usually functional in origin. Vomiting occurring from 1 to 4 hours after eating is usually due to an intrinsic gastric or duodenal lesion. Simple or uncomplicated gastric or duodenal ulcer seldom causes vomiting day after day. If vomiting is an important feature of peptic ulcer disease, suspicion of obstruction, perforation, pylorospasm, or hypersecretion should be suspected. Night vomiting is usually associated with duodenal ulcer and hypersecretors. Obstructive type vomiting has already been mentioned. Periodic vomiting with hemicranial headache is seen in migraine. Periodic vomiting may also be seen in crises of *tabes dorsalis*. Vomiting without antecedent nausea always suggests the possibility of a central nervous system lesion, such as brain tumor. This is often projectile in type. Functional vomiting with food spitting is frequently seen in young women. Various sorts of emotional trauma set off the stimulus for this reflex mechanism. Induced voluntary vomiting is practiced by some patients to produce relief from epigastric distress associated with ulcers, carcinoma and gastritis.

The physical examination, as previously mentioned, is of no great importance in the diagnosis of most digestive problems. It is naturally understood that a thorough physical examination is a necessary part of any medical workup regardless of specialty. From the digestive standpoint pertinent information is needed concerning the condition of the skin from the nutritional angle, the mucous membranes, the tongue, the lymph nodes, and the condition of the abdomen as far as contour, tenderness, guard, spasm, rigidity, palpable organs, and abnormal masses are concerned. No further detail regarding these essential points will be discussed.

The so-called Virchow's node in the diagnosis of stomach carcinoma should be clarified. Unfortunately, it is still believed by many that the finding of Virchow's nodes, i. e., left supraclavicular lymphadenopathy, is pathognomonic of gastric carcinoma. Viacava and Pack<sup>9</sup> have produced revealing information regarding the incidence of supra-

clavicular metastases from abdominal and thoracic cancers. They have shown that metastatic supraclavicular nodes are seen more often from primary growths in the lung, pancreas, and esophagus than in the stomach. The kidney, the ovary, and testicle were also seen to outrank the stomach in this connection. An interesting observation also was that no supraclavicular metastases were discovered in the records of patients with tumors of the small intestine or gallbladder. It was also observed that the stomach metastasizes far more frequently to the left supraclavicular node than to the right and bilaterally more than to the right alone. From these observations, then, we conclude that the so-called Virchow's node is not pathognomonic of carcinoma of the stomach.

**Stool examination:** The stool should be thoroughly inspected. Is it tarry, which would represent partly digested blood? Is it clay colored from lack of bile pigment? Is it greasy from excess of free fat? Are mixtures of blood, mucus, and pus present, such as seen in bacillary dysentery? Are gross parasites in evidence, such as roundworms, hookworms, etc.?

**Chemical tests of stool:** Litmus paper will test for alkalinity, which is most frequently seen with high protein diet, or acidity with high carbohydrate diet. The guaiac or benzidine test should be used for the presence of occult blood. A normal stool contains no unaltered bile pigment, its presence indicating abnormal conditions of the gastrointestinal tract, which may be demonstrated by the use of the bichloride of mercury test for urobilin or hydrobilirubin. Watson's modified quantitative test<sup>10</sup> is used for the determination of urobilinogen in the feces. Values above 400 units indicate an increased amount of urobilinogen in the stool. Values under 5 units per 100 grams of feces are equivalent to values of less than 5 mgm. per 24 hours. In obstructive jaundice the pigment, stercobilin, is diminished to absent. Every stool should be microscopically examined, at least for the presence of parasitic ova and *Endamoeba histolytica*. Undigested food particles, such as starch granules, are checked by Lugol's solution. The presence and condition of meat fibers should

9. Viacava, E. P., and Pack, G. T.: Significance of Supraclavicular Signal Node in Patients with Abdominal and Thoracic Carcinoma, *Arch. Surg.* 48: 109-119 (Feb.) 1944.

10. Watson, C. J.: Studies of Urobilinogen. 1. An Improved Method for the Quantitative Estimation of Urobilinogen in Urine and Feces, *Am. J. Clin. Path.* 6: 458-475 (Sept.) 1936.



be noted. The lack of digestion of meat fibers is seen in pancreatic disease. Neutral fats may be stained with Sudan III or osmic acid. Fats in the neutral form are in excess in pancreatic insufficiency, idiopathic steatorrhea, regional ileitis, intestinal tuberculosis, and tuberculous mesentery lymph node disease. Fatty acids may be identified by their needle-like crystals. Bacteriologic studies are done as indicated.

The urine examination: Bile pigment (bilirubin) is tested by the methylene blue test. The test is positive in jaundice from obstruction of the common bile duct and in early and subicteric forms of hepatitis. Urobilinogen in the urine is detected with the urine dilution test. Normally it is present in small amounts in the urine. It is absent in cases of obstructive jaundice with complete closure of the common bile duct, and in severe hepatitis with prolonged intrahepatic block. It is in excess in hemolytic jaundice, also in hepatitis in the incipient and recovery stages.

Special blood examinations are indicated in some gastrointestinal conditions. The icterus index is a simple test to show the degree of jaundice. It is less sensitive, however, than the serum bilirubin level. The cephalin cholesterol flocculation liver function study shows the degree of active hepatic cell involvement. One of the most accurate and dependable liver function studies is the bromsulphthalein test. Values above 8% retention at the end of 45 minutes are considered abnormal. The blood alkaline phosphatase is known to rise in cases of obstructive jaundice. The most important of the pancreatic studies is that of serum amylase, which is increased in cases of acute pancreatitis or chronic recurrent pancreatitis. The blood values here rise early and are usually back to normal inside of 48 hours. The serum lipase test is also helpful in the diagnosis of acute pancreatitis. High values here, however, tend to assume a more gradual fall to normal, returning usually within five days. It is believed by some that this test is more accurate in diagnosing carcinoma of the pancreas than the serum amylase test.<sup>11</sup> The serum amylase also tends to rise in duodenal ulcers penetrating into the pancreas, in inflammation of the salivary glands, and in advanced renal disease.

11. McCall, J. L., and Reinhold, J. G.: An Evaluation of the Clinical Significance of Serum Amylase and Lipase Determinations, *Surg., Gynec. & Obst.* 80: 434-440, 1945.

The study of the ferment concentration of the pancreatic juice is helpful in the diagnosis of obstructive jaundice, chronic pancreatitis and sprue. It is a cumbersome and time-consuming test, and hardly justified as a routine procedure. At times agglutination studies are helpful in the diagnosis of intestinal conditions such as typhoid, Shigella, Salmonella, and brucellosis infections.

The gastric analysis: The importance of the fluoroscopic positioning of the gastric tube has recently been demonstrated.<sup>12</sup> Of 100 cases studied, 31 cases were found to be correctly positioned, 69 cases incorrectly positioned. Of the 31 correct placements, 19 were considered ideal; that is, without the tube curving upon itself. It is naturally assumed that if the skilled technician is reasonably sure of the correct position of the tube by an adequate return of gastric content, no fluoroscopic positioning is necessary. It is quite possible, reasoning from this study, that many achlorhydric states have been reported which were, of course, incorrect due to inadequate positioning of the gastric tube. Patients suspected of having a malignancy of the stomach should have the sediment of the fasting gastric contents or gastric washings analysed for neoplastic cells. Papanicolaou's technique is of help in identifying such malignant cells.

Indications for x-ray and endoscopy are so well known they will not be included in this discussion.

A few illustrative cases will serve to emphasize certain diagnostic points: Case 1 is a 46-year-old male with the chief complaint of boring, epigastric pains radiating into the back of four months' duration. The condition was worse on an empty stomach and felt slightly better after eating small amounts of food. He had been previously x-rayed and a diagnosis of duodenal ulcer made. Because of the lack of improvement on the usual ulcer diet and medications, he sought further help. The history was suggestive of peptic ulcer, probably of the penetrating type. Accordingly, the patient was hospitalized and treated conservatively on a strict ulcer regimen. The surgical consultant stood by. After approximately ten days' time, no definite improvement was noted. In fact, the condition was progressively downhill. Therefore, it was our belief that the ulcer was either penetrating

12. Crenshaw, J. F.: Importance of Fluoroscopic Positioning of the Gastric Tube, *J. M. A. Alabama* 20: 208-210 (Dec.) 1950.

into the pancreas posteriorly from the duodenum, or possibly there was an independent retroperitoneal lesion. He was explored. At surgery no ulcer was found in the duodenum, the surgeon opening the duodenum to be sure. The pancreatic area was then explored and no significant abnormalities found. The search was continued into the retroperitoneal region where a lesion about the size of a pecan was found, which appeared to the surgeon to be probably a sarcomatous infiltrating-type tumor invading the inferior vena cava and pressing upon the pancreas with resulting deformity of the duodenal cap. The lesion was not resectable. The surgeon stated he was unable to obtain an adequate biopsy. This case served to emphasize the point that when a patient with a suspected disease does not show at least reasonable progress on the usual therapeutic regimen either a complication, extension, or probably an entirely different disease is the true condition and not that originally believed to be present.

Case 2 is a 34-year-old male who was seen because of a chief complaint of dull hurting in the mid-abdomen of two months' duration, with pressure sensation in the left upper quadrant extending across the abdomen into the left lower chest. He had been previously diagnosed as a stomach ulcer case but had not shown the usual response to moderately strict ulcer diet and medications. In the course of the physical examination a few small, firm nodes were felt in the inguinal, posterior cervical, axillary and epitrochlear regions. The spleen was moderately enlarged. This, plus the laboratory finding of WBC 393,000, with differential of myeloid leukemia, hemoglobin of 61%, and RBC 3,000,000, gave us the diagnosis of myeloid leukemia. In the x-rays of the upper gastrointestinal tract the stomach was displaced to the midline, actually to the right and anteriorly. This, of course, would not be a difficult diagnosis to make with accurate physical and laboratory findings alone. This is an example of the secondary reflections within the gastrointestinal tract from another source, leukemia.

Case 3 is a 58-year-old white male whose chief complaint was pains across the mid-abdomen at about the umbilical level, radiating straight through to the back and to the lower dorsal-upper lumbar region. The discomfort was rather constant, worse at night, often preventing a good night's rest. Food

apparently had no relationship to the pain. When lying in bed flat on his back, the pain was quite intense, being relieved partially by standing, but not entirely. The most comfortable position was sitting in a bent over, doubled up posture such as on the toilet seat. In the x-ray no intrinsic lesion was found in the stomach, small bowel or colon. There was only a mild degree of hypertonicity present, but this was not enough to account for the symptoms. Because of the lack of response to conservative medical therapy, it was believed that the patient probably had a retroperitoneal lesion, involving the pancreas. It was thought, too, that since no signs of common bile duct obstruction had occurred, the pancreatic lesion was probably in the body or tail. The preoperative diagnosis was based principally on symptoms. On exploration a very large tumor involving the body and tail of the pancreas was seen. Frozen section revealed adenocarcinoma of the ductal type. This case serves to emphasize the importance of adequate history taking, relative to position and movement effects on the chief complaint of abdominal pain.

Case 4 is a 69-year-old white male who was admitted to the Highland Baptist Hospital as an emergency because of sudden severe abdominal pain followed by nausea and vomiting of 5 days' duration. The pain, nausea, and vomiting persisted despite several hypodermics administered by his local physician. His last bowel movement had occurred four days prior to hospital admission; no fecal material or gas had passed since that time. Because of the possibility of intestinal obstruction seemingly involving the lower left bowel, a small amount of barium was carefully injected into the colon. No obstruction in the colon was found. The outstanding finding in the x-ray was the conspicuous number of loops in the small bowel distended with gas. This represented a massive type of small bowel obstructing lesion. Accordingly, operation was undertaken immediately. At operation a very massive thrombosis of the celiac axis and the superior mesenteric vessels was found, with marked gangrene of a large portion of the small bowel. Circulation to the stomach was also absent. This patient had marked arteriosclerosis, and the mesenteric thrombosis was on a spontaneous basis. Three feet of the small bowel were so markedly gangrenous that the wall had been permeated by bacteria and the patient had



peritonitis. Considering the extensive mesenteric thrombosis with severe gangrene and peritonitis found at operation, it was remarkable that the patient could have lived 5½ days with such a disorder. This is the second such patient known who has recently suffered such a tremendous catastrophe to the small bowel on the basis of arteriosclerosis of the main vessels supplying this portion of the gut. In both the clue should have been the very conspicuous degree of arteriosclerosis of the vessels seen in the x-ray. In neither was the diagnosis made preoperatively.

An adequate approach to a gastrointestinal problem necessarily involves a correct understanding of the possible psychosomatic aspects encountered. The role of an understanding, time-taking, and sympathetic physician in this phase of the problem cannot be underestimated. The alert physician of today is well aware of the part tension, sorrow, and unhappiness play in stomach disorders. It should be appreciated that the patient's brain, as well as his ulcer, is in need of treatment. To carefully interrogate as to the state of unhappiness and nervous strain in a patient is sometimes most revealing. The simple question "Are you happy?"<sup>13</sup> often pays large diagnostic and therapeutic dividends. To probe into the patient's personal affairs is often essential. Thirty minutes of a good history is often more valuable than thirty weeks of the best therapy available. An attempt to penetrate the so-called "cover-up" attitude must be undertaken, as pride and a sense of loyalty to some member of the family or friend may well block any revealing statement. If the patient is reticent, we sometimes must question a relative or business associate to bring forth startling findings toward a more correct diagnosis and more intelligent approach to the therapeutic problem. To conquer the basis of a chronic anxiety may outdo in the final analysis all attempts at dietary, antacid, antispasmodic, tobacco, and alcohol habit control. We must attempt to teach the patient aloofness or detachment from social stresses producing trauma and to instill the courage to carry on. It is well recognized that in this traumatic society in which we operate today the love need is probably the greatest of our emotional re-

actions. This seemingly stems from a lack of security. It is then mandatory in many gastrointestinal problems to consider the psychosomatic approach thoroughly.

#### CONCLUSION

A summary outline has been presented of an adequate approach to the average gastrointestinal case. The history, physical and routine and special laboratory procedures have been evaluated. Emphasis has been placed on a thorough psychosomatic consideration of the problem when indicated. Illustrative cases have been used to accentuate certain diagnostic points.

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**Handicapped People in Industry**—In discussing the employment of handicapped persons it would seem logical to include those disabled by both injury and illness. In most instances the determination of the employability of a rehabilitated injured man should be relatively simple. The problem hinges upon a matching of physical ability to the job available. It is logical to assume that in most instances the disability present at the time of employment is the maximum disability which will be presented. In the case of disease disability the problem is complicated by the fact that diseases are seldom static and may at any time present exacerbations making the employee temporarily or permanently unsuited to the job he holds. Such problems require a nicety of medical judgment that can be provided only by a skilful physician with an intimate knowledge of job requirements. The clinician is still handicapped by inability to predict the course of a disease process. It is likely that this shortcoming will remain unresolved and, in the last analysis, clinical judgment must remain the deciding factor.

The lack of adequate medical service in many industries is another factor in the employment of handicapped persons. Too frequently industry's medical service is provided by outside medical personnel who have little interest in the field other than the income it provides. Often these physicians have never seen the inside of the plant which they serve. In such circumstances it is usual that handicapped persons are rejected on preemployment examination. At times they may be given a physical rating, in which case the decision regarding employability is made by an employment officer who is not qualified by training to make employment decisions on questions that have a large medical component. If the employment officer and outside physician relationship is close and understanding, a satisfactory job placement program can be developed and made to work. However, it seldom proves as satisfactory as that which results when an inplant medical service is provided.—*Dernehl, South. M. J., September 1952.*

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IMPROVED CARE OF THE MENTALLY ILL AT THE  
COUNTY LEVEL: FROM JAIL TO HOSPITAL  
A SURVEY OF THE FIRST TWELVE MONTHS OF OPERATION  
OF THE MOBILE COUNTY MENTAL UNIT

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The ministering to the mentally ill by those presumed to be sane has been one of medical history's plague spots from earliest times. Pennsylvania Hospital, which was early renowned for its advances in psychiatric treatment, housed mental patients in damp, "consumption-ridden" cellars, and kept them restrained with sturdy handcuffs, rings, and "madd jackets" as recently as 160 years ago. The cases of "phrenzy" were chained to the walls, as was the universal custom. For about eight cents, a curious visitor was allowed to peer at the writhing inmates from specially constructed walkways.<sup>1</sup>

Philippe Pinel, the illustrious French physician, made a monumental contribution toward humane care of the mentally ill in 1798 by defying threats of authorities and removing the chains and manacles from the patients—actually prisoners—in Bicêtre Hospital in Paris.<sup>2</sup> His interest in insane persons was influenced by the tragedy befalling one of his friends, who, confined for insanity, escaped into the forest and there was devoured by wolves.<sup>3</sup>

The impetus given to the development of humane methods of treatment by Pinel was short-lived, and progress during the intervening 160 years has indeed been slow. At the present time in the United States mental patients may legally be held in jail in 35 states. The identification of mental illness with criminality, and the exposure of the patient as a public spectacle, in the 21 states which provide trial by jury, are other deplorable conditions.<sup>4</sup> Overcrowding of state

mental institutions is another grave problem in at least 27 states, according to a survey of the National Institute of Mental Health.<sup>5</sup> In six states the astounding rates of overcrowding range between 40 per cent and 50 per cent. In Alabama, Bryce Hospital, which was designed for 2,048 beds, had an average daily census of about 4,500 patients during 1950.<sup>6</sup> Thus, as evidenced by our failure to act through the respective state legislatures, we are perpetuating the age-old attitude of allowing the mentally ill to fend for themselves.

General hospitals offer very little aid in caring for the psychiatric patient. As an example, Moore<sup>7</sup> points out that Boston City Hospital admits approximately 1,000 obviously psychotic patients annually; but, paradoxically, psychiatry—as a service—does not exist. Of the 4,890 general hospitals in this country only about 6 per cent offer any kind of adequate in-patient psychiatric service. Only 4 per cent of all general hospital beds are used for psychiatric treatment. Consequently, approximately one-third of the psychiatrists in private practice have no hospital affiliation for treatment purposes.<sup>8</sup>

In Mobile, Alabama, a determined effort was begun in 1944 to end the revolting practice of incarcerating mental patients in the county jail; sometimes for as long as two or three months. The drive was spear-headed by William H. Holcombe, Sheriff of Mobile County, and was strongly and unceasingly supported by many civic clubs, the press, grand juries, and various organizations. A

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22-bed psychiatric unit was planned, at an estimated cost of \$110,000, to be operated in conjunction with the City Hospital. This was not to be just a place to house the mentally ill but it was to be actually a hospital for intensive treatment on a short-term basis as well.

Five years of sustained effort were required to procure the necessary funds to build and equip the unit, and two additional years to clarify the responsibility for its maintenance. In 1948 a \$90,000 bond issue was approved by the county voters, and in 1949 Mobile County was awarded \$45,000 under the Hill-Burton Act for providing mental beds. The latter sum was part of the \$14,438,625 of Federal funds allotted to Alabama in 1948 for the purpose of constructing and equipping hospitals over a five-year period. It is of passing interest that the allotment for this small mental facility was considerably in excess of the \$100,000 originally appropriated by the state legislature some 100 years ago for the construction of a state mental hospital in Tuscaloosa.<sup>9</sup>

The City Commission of Mobile from the outset steadfastly withheld all financial assistance to the project, reasoning that this problem was solely the responsibility of the County. The City Commission based its position on the fact that the Code of Alabama<sup>10</sup> specifies that the paying for the care of mental patients in the custody of the sheriff, or other authorized persons, is a county function. The County Commission, however, assuming that the City at least had a moral, if not legal, obligation to its mentally ill, finally obligated the City to pay half the maintenance cost—up to \$24,000 annually—by a compromise bill passed by the State Legislature in August 1951.

The psychiatric unit was finally completed in November 1950 at a cost of \$116,068. Due to various difficulties in regard to the responsibility for maintenance and operation the unit was not officially opened until May 21, 1951, and the first patient was admitted on May 31, 1951.

#### PHYSICAL FACILITIES OF THE MENTAL UNIT

The Holcombe Mental Unit, named by the County Commission for the unit's avid pro-

ponent, is a two-story structure adjoining the City Hospital, but not intimately associated with it physically. The upper story has not been put in use as yet. At present ten patients can be accommodated in the four double rooms, and the two alcove beds. Two additional patients may be placed in the two strong rooms in case of an emergency. A nurses' station, protected by strong wire mesh, commands a view of the entire lower floor. There is a spacious recreation room, which also serves as a dining room. In addition, there is a kitchen, a waiting room, a treatment room, an equipment room, a hydrotherapy room, toilets, and shower rooms.

#### OTHER FACILITIES

Laboratory determinations, x-rays, electrocardiograms and other such facilities of a 300-bed general hospital are available. Electroencephalograms may be made under an arrangement with the Mobile Infirmary.

#### PERSONNEL

A resident physician (Internal Medicine), an intern, and social workers of the City Hospital staff serve in the mental unit. The four psychiatrists practicing in Mobile serve on the visiting staff. During each eight-hour shift a graduate nurse, one or two licensed practical nurses, and two male attendants are on duty.

#### ADMISSION OF PATIENTS

Only mental patients who are residents of Mobile County are admitted except in the case of an unusual emergency. Admission must be approved by one of the psychiatrists on the visiting staff, or by the resident physician. Generally speaking, the most violent or dangerous patients are given preference in regard to admission.

Provision is made for the admission of private patients. Patients transferred from the jail, or admitted under a mittimus,<sup>11</sup> do not pay for hospitalization or treatment.

A permit for admission to the unit and an "authorization for treatment" form must be signed by a relative or, sometimes, by the patient himself. Patients are admitted through the usual City Hospital procedure,

9. Moore, A. B.: *History of Alabama*, University Supply Store, University, Alabama, 1934, p. 410.

10. Code of Alabama, 1940, Section 43 of Title 15.

11. A mittimus is a legal order issued by the judge of probate in cases in which the judge has "reasonable cause for believing a person to be insane." A mittimus legally places the person in question in the custody of the sheriff. Patients admitted to the Mental Unit under a mittimus are, in legal contemplation, still in the custody of the sheriff.

after a preliminary examination, unless disturbed or violent.

MANAGEMENT OF PATIENTS

Every patient receives a physical examination, routine laboratory determinations, and a chest x-ray. A history is taken, often supplemented by information from the social workers.

Types of treatment include psychotherapy, electric shock therapy, sub-shock insulin, hydrotherapy, and narcosynthesis. Occupational therapy, including basket weaving and rug weaving, is being instituted at the present time.

Patients are discharged within three or four weeks, with rare exceptions.

TABLE 1. SUMMARY OF MENTAL UNIT STATISTICS.  
 MAY 31, 1951 TO MAY 31, 1952

|  |     |
|--|-----|
| Total number patients admitted                   | 265 |
| White patients                                   | 194 |
| White females                                    | 104 |
| White males                                      | 90  |
| Colored patients                                 | 71  |
| Colored females                                  | 37  |
| Colored males                                    | 34  |
| Transferred from jail                            | 60  |
| Admitted under mittimus <sup>11</sup>            | 31  |
| Private patients                                 | 65  |
| Disposition following treatment                  |     |
| Discharged and returned to homes                 | 169 |
| To Bryce Hospital                                | 29  |
| To Searcy Hospital                               | 24  |
| To Veterans' Administration Hospitals            | 12  |
| Discharged elsewhere                             |     |
| (to other hospitals, nursing homes, jail, etc.)  | 21  |
| In Mental Unit at time of tabulation             | 9   |
| Electric shock therapy                           |     |
| Number treatments given                          | 600 |
| Number patients receiving electric shock therapy | 92  |
| Serious complications                            |     |
| Comminuted fracture, humerus                     | 1   |
| Perforated peptic ulcer <sup>12</sup>            | 1   |
| (see footnote for discussion)                    |     |

White patients comprised 73 per cent of those admitted; nearly 40 per cent of all admitted were white females. Of the 265 ad-

12. This may or may not be considered to be a complication of the electric shocks. Such accidents as this are very rarely recorded following shock therapy. The patient is a 67 year old white male with a diagnosis of manic-depressive psychosis, in a manic phase. He had had minimal, vague abdominal complaints off and on since admission (12 days before the perforation occurred), and a questionable history of proved peptic ulcer many years before.

mitted, 23 per cent were transferred from the jail and 25 per cent were private patients. One-third of the patients received electric shock therapy; an average of 6.5 electric shocks per patient. Following treatment and observation, 64 per cent of the patients admitted improved sufficiently to be allowed to return to their homes.

TABLE 2. A SIMPLIFIED CLASSIFICATION OF  
 MENTAL DISORDERS ENCOUNTERED DURING  
 FIRST 12 MONTHS OPERATION OF MENTAL UNIT

|  |     |
|--|-----|
| <i>Psychoses</i>   |     |
| <i>Functional</i>  |     |
| Schizophrenia  | 104 |
| Paranoid   | 57  |
| Catatonic  | 8   |
| Hebephrenic  | 4   |
| Simple   | 25  |
| Unclassified   | 10  |
| Manic-depressive   | 11  |
| Involutional depression  | 16  |
| <i>Organic</i>   |     |
| Acute phase (toxic and infectious)   | 36  |
| Degenerative   | 45  |
| Senile psychoses   | 35  |
| General paresis  | 3   |
| Epilepsy with deterioration  | 7   |
| <i>Non-Psychotic Conditions</i> (including drug addicts, severe character disorders, severely decompensated neurotics) |     |
|  | 31  |
| <i>Undiagnosed*</i>  | 23  |

\*The high percentage of undiagnosed cases is in part due to short time of hospitalization of some of the patients. In these cases, which were placed in the Mental Unit for 24 or 48 hours, specifically to hold in custody pending transfer to a state or V. A. hospital, diagnoses could not be made as a rule.

ADVANTAGES OF A COUNTY LEVEL  
 MENTAL FACILITY

The Holcombe Mental Unit has already conspicuously alleviated the problem of caring for mental patients in Mobile County. The mentally disturbed are usually brought directly to the psychiatric unit, but those who are taken to jail for some reason remain there but a few hours before being transferred to the unit. Besides the elimination of the stay in jail—confinement of a few

He had received three electric shocks, the last approximately 18 hours before the sudden onset of severe abdominal pain and rigid abdominal wall. A diagnosis of perforation of a hollow abdominal viscus was made, and he was taken to the operating room within six hours after the acute onset. A perforation 0.5 cm. in diameter was found at the site of an old ulcer on the anterior surface of the first portion of the duodenum. The perforation was closed and his recovery was uneventful.



weeks in jail is not usually considered to be a social advantage—treatment in the Mental Unit has been successful in many cases whereby the patient is discharged to his home rather than proceeding to a state institution. The termination of some of the acute psychotic episodes is considered to be directly related to the beginning of therapy without delay.

The mental facility also serves as a screening center. Instead of a speedy legal commitment to a state hospital, the patient is observed for a possible spontaneous termination of the mental disorder, and for evidence that the condition may not be as serious as first thought. Many mental patients—especially the senile group—may be found not to require commitment to a state institution after two or three weeks of observation. Himler<sup>13</sup> has pointed out the urgency for evaluating the cases of senile psychoses before automatically committing them to already overloaded public institutions. About 30 per cent of patients admitted to mental hospitals at present have senile or arteriosclerotic psychoses. Many of these are primarily sociologic rather than psychiatric problems, and should not be uncereemoniously dispatched to state hospitals before a careful investigation has been made.

FACILITIES FOR THE CARE OF MENTAL PATIENTS AT THE COUNTY LEVEL IN THE SOUTHEAST

Mobile County and the City of Mobile stand almost alone among counties and cities in the Southeastern States which assume complete responsibility for hospitalizing and treating mental patients at the county level on a short-term basis. The boards of health of 12 states in the southeast (plus Texas and Oklahoma) were contacted in regard to mental facilities at the county level in their respective states. All but one responded. The states contacted were Alabama, Georgia, Florida, Mississippi, Louisiana, Texas, Oklahoma, Virginia, North Carolina, South Carolina, Tennessee, and Kentucky.

Other than Mobile there are only two city or city-county programs, in the aforementioned states, which provide adequate facilities for the care of the mentally ill, according to replies from the individual state boards of health and a communication from the National Institute of Mental Health.<sup>14</sup>

13. Himler, Leonard E.: *Psychiatric Aspects of Aging*, J. A. M. A. 147: 1330-1331 (Dec. 1) 1951.

14. National Institute of Mental Health: *Communication*, April 7, 1952.

These are New Orleans, Louisiana (city supported mental hospital), and Louisville, Kentucky (city-county supported—two psychiatric wards in a general hospital).

SUMMARY

The care of the mentally ill is distinctly a state and community responsibility when one considers that approximately 95 per cent of all persons in this country in need of mental hospitalization are unable to pay for private facilities. The fate of the mental patient, therefore, is almost entirely in the hands of the legally sane citizens through their respective state legislative bodies.

The following are some of the important benefits afforded by the Mobile County Mental Unit:

1. Mental patients are no longer held in jail; they are therefore protected from emotionally harmful and degrading treatment.
2. Many acute psychotic episodes are terminated early because it is possible to institute proper therapy without delay.
3. An observation period in the Mental Unit may prevent a speedy legal commitment before the true nature of the mental illness is determined, or possibly before a spontaneous termination of the disorder is effected.
4. The unit is a valuable screening center, especially in cases of senile psychoses. Many of these patients are found to have primarily sociologic, rather than psychiatric, problems, and, although legally committable, are not sent to the already overcrowded state hospitals.

---

**Bulbar Poliomyelitis**—Oxygen is important to combat cerebral anoxia and is best given by nasal catheter. The throat must be kept clear of secretions by postural drainage and suction. Tracheotomy is indicated if the airway cannot be maintained by these methods. In the presence of pharyngeal paralysis, no food or liquids are given by mouth and the patient is maintained by par-enteral fluids or tube feedings. Atelectasis, pulmonary edema and infection are possible complications in these patients. Prophylactic penicillin and streptomycin are usually indicated, and occasionally bronchoscopy is necessary. The respirator is most helpful in those patients with weakness or paralysis of the intercostal muscles and diaphragm, due to damage of the anterior horn cells of the cord. The patient should be weaned from the respirator as soon as possible to prevent dependency on it and to facilitate the program of rehabilitation and muscle re-education after the acute illness has subsided.—*Friedewald, J. M. A. Georgia, Sept. '52.*

### Interpretation of the Serologic Test for Syphilis

—Without fear of contradiction it may be said that the most difficult problem facing the physician in the field of syphilis is the interpretation of serologic tests as these relate to diagnosis. The blood tests are of inestimable value in determining the incidence of syphilis in the population and in case finding, particularly in that great majority of patients who are in the latent stage. However, in the evaluation of a positive reaction in the individual patient it loses its statistical feature and involves at times a nicety of judgment which taxes the physician to the utmost.

For more than a decade blood tests for syphilis have become commonplace in examinations for marriage, foodhandlers, and in industry. It is certain that no physician has escaped the problem of making the decision as to whether a positive reaction in a given person justifies a diagnosis of syphilis or whether it is a false positive test. It is a foregone conclusion that hundreds of thousands of persons have received antisiphilitic treatment because of one positive or doubtful test, a diagnosis of syphilis having been erroneous.

At the present time, the ease with which syphilis may be treated by penicillin and the relative innocuousness of such treatment has led to great carelessness in the proper evaluation of the positive blood test. I shudder at the flippancy with which doctors justify their course of action in the face of positive blood tests of unknown significance. Their reasoning so often follows a line I have heard expressed to me verbally, "Maybe the positive blood tests do not mean syphilis, but I don't know; and giving some penicillin isn't going to hurt the patient. So I am going to treat them." Such malpractice seems a simple answer, but the experienced physician will agree when I warn concerning the far reaching serious consequences of making a diagnosis of syphilis. Granted, in many there is no mental trauma, but the consultant who has interest in syphilis can cite example upon example in which the diagnosis of syphilis has left a mental scar which cannot be eradicated either by the passage of years or by the repeated reassurance of physician after physician. The embarrassment and guilt, and the phobia of possible late manifestations of syphilis, so frequently discussed in the lay press and magazines, are so impressive that many patients can never shake themselves loose from fear. After repeated negative spinal fluid examinations, some of these patients still go from doctor to doctor begging for "just one more" lumbar puncture in order to be reassured that no disease is present in the nervous system. Time and again, I have refused to perform another lumbar puncture after the patient has shown me negative reports from good laboratories. Time and again, one sees a patient who has been adequately treated for syphilis, or who possibly did not have syphilis, who goes from doctor to doctor, year in and year out begging for treatment saying, "I have bad blood and syphilis but never had very much treatment and want more treatment." (This occurs in the late latent, serofast syphilitic as well as in the ones who have had false positive tests.)

Since this is the picture, the diagnosis of syphilis must not be given lightly, to be shrugged off

with penicillin which "will do no harm." It must be emphasized that it is not the treatment which does the harm—it is the diagnosis which is the serious thrust. So often the patient who has the false positive test is not a promiscuous individual (he may have had only one sexual experience with a deep sense of guilt) and he is therefore least likely to shrug off the diagnosis of syphilis. Imagine then the results in such a patient who, having had a biologically false positive blood test and a diagnosis of syphilis, has received penicillin therapy. If it is an inherently false positive test which he carries with him all his life, and repeated tests are done, he is almost certain to anticipate the late manifestations of syphilis and to feel that his treatment was ineffectual. If the patient had a false positive test because of intercurrent infection or other reason, which will appear later, and receives penicillin and subsequently is seronegative, he will carry with him always the fact that he had a diagnosis of syphilis. The moral connotation and guilt, even though the blood is negative, may be with him always.

It is quite obvious, therefore, that the physician who makes the diagnosis of syphilis on the basis of a positive blood test alone, without giving any thought to the patient's background, to his past history of promiscuity or absence of sexual exposure, the familial background and other factors, may be setting off iatrogenic disease from which the patient may never recover. The physician may thereby color the patient's life and actions for the remainder of his life. Marriage plans may be postponed, pregnancies may be avoided; anxiety states and psychoneuroses be established for life.—*Kampmeier, New Orleans M. & S. J., September 1952.*

**Angina Pectoris**—The survival rates for 6,882 patients who had angina pectoris associated with coronary sclerosis and who were examined at the Mayo Clinic over a period of 18 years have been determined. The minimal follow-up period was 5 years, and the maximal follow-up period was 23 years.

The average age at diagnosis of angina pectoris at this clinic was 58.8 years for the total series, 58.5 years for the males and 60.1 years for the females. The average duration of symptoms of angina pectoris prior to diagnosis at this clinic was 2.5 years. The ratio of males to females was roughly 4 to 1. This ratio was highest in the younger age groups, lowest in the older.

... The survival curve for the entire series is decidedly lower than the curve for the normal population; the prognosis for the females was better than for the males. The five year survival rate for the entire series was 58.4% as compared to the rate of 86.9% for the normal population. The 10 year survival rate for the entire series was 37.1% as compared to the normal rate of 70.4%. A comparison of the 5 year and 10 year survival rates by age groups indicated a more favorable result for the younger ages; however, when the rates were adjusted for the normal death rate the values were about the same.—*Block et al., J. A. M. A., September 27, '52.*



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## APLASTIC ANEMIA AND CHLORAMPHENICOL

"One of the most frustrating of the problems that confront the hematologist always has been aplastic anemia. He thinks that somewhere in the patient's environment may be an agent responsible for the suppression or failure of the bone marrow and that, if the agent could but be found and removed, recovery might result. Seldom is such an agent found although occasionally some new commercial solvent, some new commercial process using old solvents, or some new drugs introduced into the therapeutic field prove to have toxic effect. Individual idiosyncrasy for many of these agents, however, complicates the problem tremendously.

"General experience in the past has shown that even though newly introduced drugs are stated, on the basis of careful experimental and clinical study, to have no injurious effect on hematopoietic tissues, long and extensive clinical administration may be required before possible sensitivity reactions are demonstrated. This is probably best shown by the history of amidopyrine, which was discovered chemically in 1889 but was not introduced into medicine until some years later. Amidopyrine was used extensively during the years shortly before and after 1920, and it was not until 1934 that Madison and Squier published their data showing that some persons had specific sensitivity to this drug that resulted in the development of acute granulocytopenia. Although the time between the introduction of other drugs and the discovery of untoward reactions has been shorter in many instances, it is now recognized that a great many drugs may have profound effect on the bone marrow and that this effect may be irreversible and fatal. To cite only a few such instances: (2-isopropyl-4-pentenoyl urea (Sedormid) may specifically affect the circulating platelets; sulfonamide drugs have been reported to produce a variety of blood dyscrasias; and the same is true of the goitrogenic preparations, such as 2-thiouracil and propylthiouracil. The fact that these useful drugs have such effect does not invalidate their use. However, the attending physician must be aware of possible toxic effects and must take appropriate steps for their recognition. Recently reports have appeared that indicate that use of chloramphenicol may be associated with aplastic anemia."

Thus do Hargraves, Mills, and Heck<sup>1</sup> begin their discussion of this subject. The Rochester clinicians report 8 cases of theirs and they tell us that "In 11 months we have had eight referred cases of aplastic anemia in which we have been able to establish a history of ingestion of chloramphenicol. The relationship of the medication to subsequent events, both in time and in sequence, leads us to believe that this relationship is one of cause and effect." They have had a few other cases also. The Mayo observers further tell us that "No treatment has been of avail in these cases. It seems that cortisone, corticotropin (ACTH), and vitamin B<sub>12</sub> have had fair trials without obvious effect. Had the cases not terminated fatally in such a short time, more satisfactory evaluation of such treatment might have been possible. Repeated transfusions are indicated for supportive treatment."

Once again untoward and even fatal results of the so-called wonder drugs are being reported. Anyone familiar with chloramphenicol can attest to its very great usefulness and it has probably saved many lives. So long as it appeared to be safe and innocuous many doctors used it indiscriminately and for minor infections. And now the tragic end results are belatedly coming in. Parke, Davis and Company, manufacturer of the drug, has issued a letter to the profession in which it states that "you are informed that aplastic anemia, thrombocytopenic purpura, thrombocytopenia, and pancytopenia may follow the use of Chloromycetin; hence the precaution of judicious use, alert observation of the patient, and adequate blood studies will be emphasized in all communications to the medical profession." And the Food and Drug Administration, being faced with the problem of deciding about the future use of chloramphenicol, has stated that it can be obtained only upon a doctor's prescription. The Food and Drug Administration also holds that chloramphenicol "should continue to be available for careful use by the medical profession in those serious and sometimes fatal diseases in which its use is necessary."

1. Hargraves, Malcolm M.; Mills, Stephen D., and Heck, Frank J.: Aplastic Anemia Associated with Administration of Chloramphenicol, J. A. M. A. 149: 1293 (Aug. 2) 1952.

#### ISOTOPE TRACER TECHNIQUE CITED AS VALUABLE MEDICAL ADJUNCT

As a diagnostic medium, the isotope tracer technique, using radioactive isotopes produced by the United States Atomic Energy Commission, has been hailed as one of the most valuable medical adjuncts since Roentgen's discovery of the x-ray.

A high accuracy in the determination of malignant and nonmalignant thyroid conditions was reported in an article in a recent issue of Radiology, published by the Radiological Society of North America and devoted to clinical radiology and allied sciences.

A report of experiences with the isotopes at the Harper Hospital, Detroit, was presented by K. E. Corrigan, Ph. D., and H. S. Hayden, Ph. D., both associated with the radiology department of the hospital.

The diseased thyroid gland is usually not a continuous organ; thyroid tissue is frequently found beyond the bounds of the capsule that surrounds the main gland. Local areas of malfunction are probably the most significant diagnostic problems. The Detroit scientists pointed out, "The thyroid is a highly unreliable organ, and in any state of malfunction its location and distribution are seldom those shown in the books on anatomy."

To aid in the diagnosis, radioactive iodine (I 131) was given by mouth on an empty stomach, excepting in cases where the patient was unable to swallow, in which event the isotope was administered intravenously. The radioactive material had a tendency to accumulate in diseased spots, which were then located by a Geiger counter in scanning studies covering the body.

The report said that 1,754 tracer studies were conducted up to the end of last March, with 107 diagnoses of a malignant growth of the thyroid.

"Of these," the scientists added, "11 were totally unsuspected on clinical or any other grounds and were first reported as malignant by tracer technique."

Four cases diagnosed malignant could not be demonstrated by subsequent microscopic examination of the tissue, although one later developed a metastasis. In one case, a malignant lesion was found which had not been reported.

"In the other 151 operated cases, in which the original problem was to distinguish be-



tween malignant and nonmalignant thyroid disease prior to operation and the tracer report was negative for malignancy, no malignancy was found in any case," the report added.

The Detroit scientists also reported the use of a Geiger counter which had been built into a sterile probe. In one case, after the surgical removal of all of the thyroid tissue detectable by visual observation and feeling, the probe counter was inserted into the wound. It showed a strong localization of the radioactive iodine in an out-of-the-way place. A larger incision was made, and at the tip of the probe was found a dark colored ball of tissue.

This tissue on microscopic examination proved to be completely cancerous, the article added. The significance is that without the tracer technique, the second malignancy would not have been found, it was pointed out. "Since these apparently represented all the residual cancer present, the tracer obviously gave the patient some chance of prolonged life which he would not have had otherwise," the report said.

The Detroit scientists emphasized the importance of a thorough technique, adding that any inadequate procedure, especially one where a diagnosis is based on a single observation, can be dangerous and misleading.

#### MEETING OF SOUTHERN AUXILIARY

The Southern Medical Association meets in Miami, Nov. 10-13, 1952, and all indications are that it will be a meeting to be long remembered. The hospitable Miamians are going all out in planning a delightful social program for the ladies.

A (tentative) Auxiliary program is as follows:

Sunday, Nov. 9—Special Executive Committee meetings.

Monday, Nov. 10—Luncheon for Past Presidents; Luncheon for Counselors.

Tuesday, Nov. 11—Executive Board Breakfast; General Sessions; Doctors' Day Luncheon; Other Social Activities, including a fish fry on the beach.

Wed. Nov. 12—General Sessions; Luncheon honoring the President, Mrs. V. Eugene Holcombe, the President-Elect, Mrs. Richard Stover, visiting State Presidents, and Charter Members.

Thur. Nov. 13—Executive Board Banquet.

The Auxiliary to the American Medical Association will furnish two of the speakers. Mrs. Ralph B. Eusden, President of the Auxiliary to the A. M. A., will discuss the aims and general program of the Auxiliary, and Mrs. John McCuskey, a Vice-Chairman, will speak on nurse recruitment.

Wives attending the Southern Medical Association meeting with their husbands are cordially invited to attend all activities of the Auxiliary.

Alabama members of the Auxiliary's Executive Board are Mrs. J. U. Reaves, Mobile, and Mrs. W. M. Salter, Anniston.

#### VA COURSE IN PSYCHIATRY AND NEUROLOGY

The Veterans Administration is instituting a four-month intensive training course in psychiatry and neurology to fit the needs of physicians without such previous training who are assigned to duty in 22 predominantly psychiatric hospitals. Physicians who have been engaged in general practice may request this training upon applying for a position at one of these hospitals.

The course will be held at the VA Hospitals in Coatesville, Pennsylvania; Palo Alto, California; and a joint Downey-Hines, Illinois, program near Chicago, Illinois. Physicians will be employed at salaries commensurate with their training and experience (salary range: \$5,500 to \$11,800 per annum) and assigned to the course with travel and per diem for the four month period.

Information and applications may be obtained from your nearest VA Hospital or Regional Office, or by writing to the Chief Medical Director, Veterans Administration Central Office, Washington 25, D. C.

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**Diverticulitis**—Diverticulitis is usually thought of as a disease amenable to medical management. We know that at times it becomes a grave and immediate surgical problem. It is true that a large percentage of patients suffering from this disease are successfully treated by the physician. A remarkably small number demand surgical intervention; for the most part it is the complications of the disease that necessitate surgery.

The most frequent complication is abscess formation with local peritonitis. This condition in the absence of obstruction requires incision and drainage alone. If obstruction is present, decompression by means of cecostomy or, more preferably, by colostomy through an upper right transverse incision is indicated.—*Cave and Wichern, Kentucky M. J., August '52.*

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### THE LAST SHOT

W. A. Dozier, Jr.  
Director of Public Relations

For some time now this column has been devoted to presenting information concerning the coming election on November 4, and to stating various ideas on how one should go about deciding how he is to vote. All of those columns were designed to try to be certain you do two things, vote and vote intelligently. It is perhaps impertinence to assume that any of these articles will have any effect upon anyone, but perhaps it is not impertinent to assume that anyone reading this Journal is capable of acting on information instead of prejudice or blind emotion. Because of that, perhaps these writings have not been out of line.

This is the last issue before election day; therefore, this is the last shot. This will not be as lengthy as some of the others, for there are but two matters that need expressing. First of all, be consistent in your voting. By that statement it is not meant that one must vote for one party because he always has. That notion was mentioned earlier. By being consistent it is meant that one should vote as he has been talking. Before you cast your ballot, look back over your discussions and expressed ideas of the past few months or years. Based on what you have learned of the platforms of the two parties, is your proposed vote consistent with what you have argued for? If not, can you defend yourself in your own thoughts?

People are prone to be inconsistent, or so it seems. This writer was amused at a conversation he listened to recently. The principal discussant was most definite about one thing. The Dixiecrats should get out of the Democratic party and become Republicans; they always vote that way. If the Southerners who keep voting in Congress with the Republicans do not come into line, they should be dropped from the roll of Democrats. About this he was most vehement. His expressed opinions and his great feeling on the matter did not bother this writer. However, a few minutes later it was rather

hard to keep a straight face when information came out that he was a Republican for Stevenson. It seems he has been a Republican for years but has always voted the Democratic ticket. The inconsistency between his arguments and his actions was amusing.

One more point on this same matter. It is very easy to rationalize yourself out of or into almost any way of thinking you may desire. The discussant above could and did do just that to his own satisfaction. So when evaluating your words against your actions, be honest with yourself.

Finally, when you go to the polls, vote your convictions. No, that may not be as easy as you think, and it may not be as elementary. Sometimes it takes a great amount of courage to vote your convictions. If, however, they are not worth voting for and defending, are they worthy of you?

Over the period of the last few months a fair amount of printer's ink has been used in this column. If you will go to the polls on November 4 and vote your convictions based on information you have gathered, then the ink was not wasted. The conclusion you reach is of no concern to this writer, but your process in reaching that conclusion is.

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**Medical Progress**—Every aspect of man's life today reflects the remarkable progress made in science, invention, and culture. The medical profession, too, can point with pride to unbelievable progress in research and understanding, as well as the prevention, cure, and treatment of disease.

Medical science and the family doctor have managed during the past half century to add more than twenty years to man's life span, making it probable that a person will live to celebrate his sixty-seventh birthday in 1952, whereas in 1900's the average life span was 47.3 years.

The increased life span can be attributed to many advances in medicine—new drugs, improved techniques, better equipment, and intensive medical research. These advances are all reflected in the health record of America today. In 1900, of every 1,000 babies born, 150 did not reach their first birthday. Of the total deaths in that year one-fifth were infants. Today out of every 1,000 live births, about 30 infants die at or after birth.—*Texas State J. Med.*, September '52.



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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

#### MORE HOSPITAL FACILITIES FOR ALABAMA

Alabama's hospital construction program under the terms of the Hill-Burton Act is five years old this year. Although some preliminary steps leading in that direction were taken somewhat earlier, the program proper may be said to have started in 1947. The State Health Department's Hospital Planning Division was organized in March of that year, and the program itself started rolling during the ensuing few months. Alabama Project No. 1, the George H. Lanier Memorial Hospital, at Langdale, which, incidentally, was also U. S. Project No. 1, was approved by the Division and the State Health Officer March 22, 1948. It received the approval of the Surgeon General of the U. S. Public Health Service—ahead of all others in the entire country—on the same day.

The Hill-Burton Act provided for a complete survey of the facilities available in each of the states, this to be completed before plans should be made for construction of new hospitals and public health centers. The purpose of this proviso of course was to find out what each state needed in the way of such facilities. With that knowledge, a state would be in a much better position to plan a long-range building program.

The Alabama survey brought out some disturbing facts and figures. This state was found to be woefully lacking in facilities of this kind. More specifically, it was found that there were only 4,804 acceptable hospital beds in the entire state. At that time the state's population was estimated at 2,728,120. That gave a ratio of about 1.76 satisfactory hospital beds per 1,000 population. Expressed differently, it represented just about one bed for every 569 persons, on an average. This ratio was less than two-fifths of what medical care authorities consider a safe and proper minimum. They said Alabama should have 12,277 acceptable hospital beds.

The situation was even worse than that in certain areas, much worse. For it was found that 33 of the state's 67 counties, almost half, did not contain a single hospital bed that could meet the minimum standard of acceptability.

While the purpose of the Hill-Burton Act was primarily to encourage the construction of non-profit general community hospitals, it was also framed to help meet the need for more and better community health centers and institutions devoted to specific illnesses, such as tuberculosis, mental and nervous conditions and other chronic diseases. That study also included the facilities available for the care and treatment of victims of those diseases and conditions. And the results showed that Alabama was as badly off in those specialized fields as in the matter of general hospitals.

So much for the picture in 1947. What of the present? How far has Alabama gone in the way of making up for those hospital and community health center shortcomings?

The progress made during the past five years has been extremely encouraging, although limited funds have restricted the program. Since final approval was given to that No. 1 project (the George H. Lanier Memorial Hospital, at Langdale), 16 hospitals have been completed and are now in use. They have a combined capacity of 1,205 patients. You may be interested to know where they are situated. In addition to that one in Langdale, they are filling urgent needs in Opp, Mobile (two hospitals there), Tuskegee, Birmingham (two hospitals there), Montgomery, Ft. Payne, Ashland, Athens, Hamilton, Marion, Ozark, Union Springs and Opelika.

Fortunately, these 16 projects tell only a part of the story of community hospital building in Alabama. At the time the present paper was prepared, there were 11 hospitals under construction. They will be situated in Mobile, Tuscaloosa, Oneonta, Vernon, Aliceville, Reform, Chatom, Evergreen, Demopolis, Moulton and Roanoke. They will provide 715 beds.

It would be incorrect, however, to assume that Alabama is now 1,205 nearer the gener-

al hospital beds she needs than she was in 1947 and will soon be still nearer by 715 beds. For to do so would take no account of the state's growing population, which inevitably has brought an increase in the number of beds needed to provide adequate care for all our people. So a considerable number of those 1,205 beds that have been added since 1947 have been absorbed by the increased need.

A part of the increased need, fortunately, has been offset by improvements in older hospitals. You will recall that the figures given earlier in this paper referred to acceptable hospital beds. An institution, in order to have its bed capacity included in the state total, had to comply with certain standards of construction, equipment and operation. So, when that survey was made in 1947, it was necessary to exclude a considerable number of beds, making the total of acceptable beds markedly short of the number of actual beds. Some of those that were excluded were in institutions that failed pretty widely to comply with the minimum standards. A great many others, however, failed of acceptability by relatively narrow margins. So most of these latter needed only time to qualify. A considerable number of them have done so and are therefore now fully abreast of the standards. Naturally, as they removed the conditions causing them to be unacceptable, their beds were added to the state total of acceptable beds. Some that still cannot qualify are expected to do so within the next few months.

Latest reports show that Alabama still needs nearly 6,000 beds, in addition to those hospitals under construction, to give its people the hospital care they should have. So the goal is still pretty far in the distance. And, remember, that goal is constantly moving as the state's population, and its needs for such facilities, increase.

In spite of that growing need, we certainly have made marked progress. In 1947 we had approximately 40 per cent of the acceptable beds we needed. In 1948 that had increased to approximately 47 per cent. In 1950 it was slightly better than 54 per cent. In 1951 (for reasons which will be explained in a moment) the percentage dropped to slightly less than 53. At the time this paper was prepared it had increased to between 56 and 57.

Concerning that apparent slump in 1951,

the Hospital Planning Division had this to say:

"The marked decrease in the number of beds provided in 1951 was due solely to the drastic reduction in Federal funds for hospital construction. At the time of the cut in funds the projects then under construction called for a total Federal share in excess of the reduced allocation to the state. Therefore, no new projects could be approved during that year.

"The retrograde movement of the percentage of need filled in 1951 was due to two causes. Obviously, with no new projects approved during that year the only increase could be accomplished through the licensure program (meeting of the standards for acceptability by hospitals formerly found unacceptable). The second cause was the marked increase in population of the 1950 estimate. Thus it can be seen that two factors combined to result in a slightly less adequate hospital system."

Fortunately, the upward trend has been resumed, as you will recall from the percentages referred to a few moments ago. The 1952 ratio of acceptable hospital beds to the number needed is higher than that for any previous year.

One point which should be emphasized is that that drop in 1951 was not in any sense a reflection or result of any lack of interest on the part of the people of Alabama in better hospital facilities. Any number of communities which, for one reason or another, have not been able to qualify for the substantial Federal financial assistance provided under the Hill-Burton Act are eagerly waiting until they can do so. The records of the Hospital Planning Division show that fourteen applications have been received in 1951 and 1952 alone. They represent about a third of the 42 hospitals not yet approved for construction.

As already pointed out, the primary purpose of the Hill-Burton Act was to encourage the construction of non-profit community hospitals. But it also had other purposes. One of them was the construction of modern and efficient community health centers.

When that statewide survey was made in 1947, it revealed a pretty deplorable condition with reference to the housing of Alabama's county health departments. Some were in the basements of court houses. Others were in ramshackle wooden buildings



that were no credit to their communities. Only a comparatively few provided anything like sufficient space for the efficient carrying on of public health activities at the county level. Visiting public health authorities expressed surprise that a state with as good a reputation for public health progress as Alabama enjoyed would be satisfied to house its local public health agencies so inadequately. The truth of course is that the state was not satisfied with such poor quarters. But it had little or no choice. Or rather those in charge of public health activities had little or no choice. The quarters being occupied, small, cramped and hopelessly inadequate as they were, were the best they could obtain. So county health officers and their staffs did the best they could with what they had. That they accomplished so much under such great handicaps reflects great credit upon them.

That 1947 survey showed that only 33 county health departments in the state were housed in acceptable or satisfactory quarters. That was slightly less than half.

There is still considerable distance to travel before all those 34 county health departments that were inadequately housed in 1947 will have suitable quarters. But the Federal funds made available by the Hill-Burton Act have changed the picture encouragingly. At the time this paper was prepared eight community health centers had been completed under that Act's provisions. A ninth was under construction.

However, the community health center picture has not improved as much as these figures would indicate. For public health centers, like stores, dwellings and other structures, deteriorate with time. A second survey made several months ago showed that seven community health centers that were acceptable in 1947 were no longer so. So those which became unsatisfactory during that five-year period almost balanced or cancelled out those which were constructed. There was a net gain, therefore, of just two, including the one community health center now under construction. That, incidentally, will house the Madison County Health Department. It will be situated of course at Huntsville.

The eight community health centers already completed are now serving the local public health needs of Jefferson, Dallas, Clay, Etowah, Limestone, Cullman, Sumter and Lee counties. It should also be pointed

out that, while the Chambers County Health Department does not have its own building, it has modern and adequate branch office space in the already mentioned George H. Lanier Memorial Hospital, in Langdale.

That 1947 survey showed this state needed 3,450 tuberculosis sanatorium beds but had only 519 that were acceptable. Since then the improving tuberculosis picture has reduced the estimated needs to 2,290 beds, or 1,771 more than were available in 1947. One tuberculosis hospital, the District I Tuberculosis Sanatorium near Decatur, has been completed since that time. It provides 184 beds.

The estimated need in the way of beds for victims of mental and nervous conditions in 1947 was 13,641. The state then had 5,729 acceptable beds, which number was later reduced to 3,206. That left acceptable beds short of needs by 10,435. Completion of two projects, consisting of additions to the Mobile City Hospital and Bryce Hospital, at Tuscaloosa, has reduced this gap only slightly—by 145.

Other projects financed in part by Federal funds made available by the Hill-Burton Act include nurses' homes and nurses' training schools at the Carraway Methodist Hospital, in Birmingham, and Sylacauga Hospital, in Sylacauga, and a dental clinic at the University of Alabama, in Birmingham.

Alabama's needs in the way of community hospitals, health centers, tuberculosis sanatoria, institutions for the mentally sick, etc. are certainly still far from being met. But we are on our way. We have made excellent progress. Greater progress should be made during the next few years.

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**The Uterine Fibroid**—The treatment of uterine fibroids depends upon various factors, such as the age of the patient and her desire for future children, the location, size and rate of growth of the tumor, and the presence of complicating pelvic disease. In general, symptomless tumors need no treatment; they probably will regress in size or disappear after the menopause. The advisability of active treatment by radiation or radium or by surgical intervention will depend upon a review of the factors mentioned previously. Medical treatment is ineffective usually, although the usage of oxytocic drugs, as ergot and pituitrin, may be effective temporarily in controlling excessive bleeding. Rest obviously is indicated during periods of menorrhagia, and an ice cap over the lower abdomen may help psychologically. The secondary anemia produced by the excessive bleeding should be combatted by the administration of an adequate diet, with plenty of protein, together with some form of iron and with vitamin B.—*Laughlin, J. Maine M. A., August '52.*

## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director  
SPECIMENS EXAMINED

July 1952

|   |        |
|---|--------|
| Examinations for diphtheria bacilli and Vincent's         | 140    |
| Agglutination tests (typhoid, Brill's and undulant fever) | 1,451  |
| Brucella cultures   | 23     |
| Typhoid cultures (blood, feces and urine)                 | 845    |
| Examinations for malaria                                  | 401    |
| Examinations for intestinal parasites                     | 3,713  |
| Serologic tests for syphilis (blood and spinal fluid)     | 27,353 |
| Darkfield examinations                                    | 9      |
| Examinations for gonococci                                | 1,914  |
| Examinations for tubercle bacilli                         | 3,191  |
| Examinations for meningococci                             | 0      |
| Examinations for Negri bodies (microscopic)               | 109    |
| Water examinations  | 1,979  |
| Milk and dairy products examinations                      | 4,833  |
| Miscellaneous   | 1,182  |
| Total   | 47,143 |

## BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

## CURRENT MORBIDITY STATISTICS

1952

|                         | June | July | E. E.*<br>July |
|-------------------------|------|------|----------------|
| Typhoid and paratyphoid | 8    | 12   | 11             |
| Undulant fever          | 7    | 1    | 1              |
| Meningitis              | 9    | 14   | 10             |
| Scarlet fever           | 12   | 3    | 22             |
| Whooping cough          | 51   | 35   | 98             |
| Diphtheria              | 6    | 9    | 16             |
| Tetanus                 | 1    | 4    | 4              |
| Tuberculosis            | 203  | 226  | 251            |
| Tularemia               | 0    | 0    | 0              |
| Amebic dysentery        | 1    | 0    | 2              |
| Malaria                 | 5    | 7    | 81             |
| Influenza               | 95   | 35   | 29             |
| Smallpox                | 0    | 0    | 0              |
| Measles                 | 819  | 217  | 124            |
| Poliomyelitis           | 23   | 62   | 33             |
| Encephalitis            | 1    | 0    | 1              |
| Chickenpox              | 77   | 32   | 13             |
| Typhus fever            | 2    | 0    | 27             |
| Mumps                   | 159  | 36   | 62             |
| Cancer                  | 438  | 331  | 313            |
| Pellagra                | 7    | 3    | 3              |
| Pneumonia               | 159  | 76   | 117            |
| Syphilis                | 442  | 169  | 1149           |
| Chancroid               | 12   | 3    | 14             |
| Gonorrhea               | 389  | 278  | 613            |
| Rabies—Human cases      | 0    | 0    | 0              |
| Positive animal heads   | 32   | 46   | 0              |

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

It is not enough to make health knowledge available; the individual has to decide for himself to accept such knowledge and make it part of his way of life. As the physician, through the concept of psychosomatic medicine, has rediscovered the patient, so the public health worker has rediscovered the public he serves by the realization that people are best helped through understanding how to help themselves.—A. W. Dent, *Pub. Health Reports*, April 1952.

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

## PROVISIONAL BIRTH AND DEATH STATISTICS FOR MAY 1952, AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                       | Number<br>Registered<br>During<br>May 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|---|--|-------|---------|--------------------------|-------|-------|
|   | Total                                      | White | Colored | 1952                     | 1951  | 1950  |
| Total live births   | 5887                                       |       |         | 22.2                     | 23.2  | 22.3  |
| Total stillbirths   | 177  |       |         | 29.2                     | 29.0  | 25.5  |
| Deaths, stillbirths excluded  | 2198                                       | 1300  | 898     | 8.3                      | 8.4   | 8.3   |
| Infant deaths:  |  |       |         |                          |       |       |
| under one year  | 194  | 96    | 98      | 33.0                     | 27.4  | 38.7  |
| under one month   | 129  | 77    | 52      | 21.9                     | 20.3  | 25.8  |
| Causes of Death   |  |       |         |                          |       |       |
| Tuberculosis, 001-019   | 58   | 22    | 36      | 21.8                     | 27.3  | 22.2  |
| Syphilis, 020-029   | 11   | 1     | 10      | 4.1                      | 6.1   | 4.2   |
| Dysentery, 045-048  | 3  | 2     | 1       | 1.1                      | 0.4   | 1.2   |
| Whooping cough, 056   | 2  |       | 2       | 0.8                      | 0.8   | 0.8   |
| Meningococcal infections, 057   | 1  |       | 1       | 0.4                      | 0.4   | 0.4   |
| Poliomyelitis, 080, 081   | 1  |       | 1       | 0.4                      |       | 0.4   |
| Encephalitis, 082, 083  |  |       |         |                          | 0.4   |       |
| Measles, 085  | 5  | 3     | 2       | 1.9                      | 1.9   | 1.9   |
| Malignant neoplasms, 140-205  | 231  | 163   | 68      | 86.9                     | 83.1  | 88.6  |
| Diabetes mellitus, 260  | 25   | 16    | 9       | 9.4                      | 8.0   | 9.6   |
| Pellagra, 281   | 3  | 3     |         | 1.1                      | 1.1   | 1.2   |
| Vascular lesions of central nervous system, 330-334                     | 258  | 144   | 114     | 97.1                     | 103.6 | 99.0  |
| Other diseases of nervous system, 300-318, 340-398                      | 33   | 16    | 17      | 12.4                     | 12.9  | 12.7  |
| Rheumatic fever, 400-402  | 3  | 2     | 1       | 1.1                      | 2.3   | 1.2   |
| Diseases of the heart, 410-443  | 708  | 456   | 252     | 266.5                    | 264.1 | 271.6 |
| Diseases of the arteries, 450-456                                       | 40   | 26    | 14      | 15.0                     | 12.1  | 15.3  |
| Other diseases of the circulatory system, 444-447, 460-468              | 31   | 15    | 16      | 11.7                     | 9.9   | 11.9  |
| Influenza, 480-483  | 16   | 8     | 8       | 6.0                      | 10.2  | 6.1   |
| Pneumonia, 490-493  | 73   | 35    | 38      | 27.5                     | 28.8  | 28.0  |
| Bronchitis, 500-502   | 7  | 3     | 4       | 2.6                      | 0.4   | 2.7   |
| Appendicitis, 550-553   | 4  | 3     | 1       | 1.5                      | 1.5   | 1.5   |
| Intestinal obstruction and hernia, 560, 561, 570                        | 14   | 5     | 9       | 5.3                      | 4.6   | 5.4   |
| Gastro-enteritis and colitis (under 2) 571.0, 764                       | 8  |       | 8       | 3.0                      | 1.1   | 3.1   |
| Cirrhosis of liver, 581   | 11   | 8     | 3       | 4.1                      | 3.4   | 4.2   |
| Diseases of pregnancy and childbirth, 640-689                           | 10   | 2     | 8       | 16.5                     | 27.0  | 21.8  |
| Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 683, 684 |  |       |         |                          | 6.4   | 3.4   |
| Congenital malformations, 750-759                                       | 26   | 16    | 10      | 4.4                      | 2.9   | 4.6   |
| Accidental deaths, total, 800-962                                       | 169  | 110   | 59      | 63.6                     | 63.7  | 64.8  |
| Motor vehicle accidents, 810-835, 960                                   | 65   | 50    | 15      | 24.5                     | 28.5  | 24.9  |
| All other defined causes  | 349  | 201   | 148     | 131.4                    | 142.3 | 133.9 |
| Ill-defined and unknown causes, 780-793, 795                            | 98   | 40    | 58      | 36.9                     | 31.5  | 37.6  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon May report of the years specified.



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## BOOK ABSTRACTS AND REVIEWS

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**Psychosomatic Gynecology:** Including Problems of Obstetrical Care. By William S. Kroger, M. D., Assistant Clinical Professor of Obstetrics and Gynecology, Chicago Medical School, Attending Obstetrician and Gynecologist, Edgewater Hospital, Chicago; and S. Charles Freed, M. D., Adjunct in Medicine, Mount Zion Hospital, San Francisco, California. Cloth. Price, \$8.00. Pp. 503. Philadelphia: W. B. Saunders Co., 1951.

This interesting book on psychosomatics is unique in many ways. It is written by two clinicians, neither of whom is a psychiatrist or has received extensive formal psychiatric training. It is a result of approximately 15 years of their "experiences and the conviction of a great need for an understanding of psychodynamics so as to give proper service to . . . patients." The authors have succeeded in their efforts to orient the gynecologist in the underlying psychodynamics of disease.

The first part of the book is devoted to a study of the psychosomatic aspects of the fetus and infant, including the significance of early psychosexual development as relates to gynecology. The next part of the book is a study of the psychosomatic aspects of the mother during pregnancy. This includes a chapter written by Grantly Dick Reed which follows the same theme as in Reed's other writings on the subject. Part 3 is "Psychosomatic Aspects of Neuroendocrinology." Part 4 is devoted to the common psychosomatic problems of gynecology such as sterility, frigidity, dyspareunia, etc. Part 5 is devoted to methods of diagnosis and treatment.

This book is well written and the practical clinical point of view is ever present. As in any writing on psychiatry, many of the ideas seem overly theoretical and speculative. In general, though, it is easy to read and easy to understand. This book can be very useful in bridging the gap between psychiatry and gynecology. It will give the psychiatrist and the gynecologist a better understanding of each other's problems and attitudes. It is strongly recommended as a helpful, informative and thought provoking book for all physicians who wish to understand the psychosomatics of pregnancy and gynecology better.

Joe W. Perry, M. D.

**Callander's Surgical Anatomy.** Revised by Barry J. Anson, M. A., Ph.D. (Med. Sc.), Professor of Anatomy, Northwestern University Medical School; and Walter G. Maddock, M. S., M. D., F. A. C. S., Elcock Professor of Surgery, Northwestern University Medical School. Third edition. Cloth. Price, \$14.00. Pp. 1074, with more than 1400 illustrations on 929 figures. Philadelphia: W. B. Saunders Company, 1952.

Dr. Callander died before he had finished the revision of the third edition of his *Surgical Anatomy* and the book was turned over to Drs. Anson and Maddock for completion. The last edition was in 1939. The present edition still adheres

largely to the style as initiated by Dr. Callander, with emphasis on regional anatomy and surgical approaches. The section on the heart and lungs has been extensively revised in keeping with the surgical progress that has been made in these regions since publication of the last edition. The section on hernia has been largely rewritten. Many of the illustrations are drawn from extensive anatomical work done by Dr. Anson and his collaborators. The volume is in two column format for easier reading.

The book is an excellent one and should be available as a means of quick reference for those physicians interested in surgery.

John M. Cameron, M. D.

**Indications for Tonsillectomy**—The occurrence of repeated attacks of acute tonsillitis (over two in a period of weeks), with local and systemic manifestations, is always the principal indication for removal of the tonsils. Such attacks may begin as early as one and a half to two years of age. While it is the opinion of some physicians that the tonsils should not be disturbed under any circumstances prior to the age of five years, when repeated, acute episodes occur, it is my belief that the child would be better with the tonsils removed, regardless of the age. Efforts should always be made to tide the child over until older, at which time the procedure may not be necessary but, if so, the ultimate result may be expected to be superior. However, to be too extreme in this attitude may cause the child much discomfort and may unduly endanger it to the complications of such repeated attacks of acute disease. Also, relieving the concern of the parents will indirectly have a beneficial effect upon the well-being of the child.

Peritonsillar abscess is rare in children, but is a difficult problem when it does occur. Following abatement of the disease, tonsillectomy is advisable.

Persistent cervical adenitis with attacks of threatened or actual suppuration, necessitating antibiotics, may require tonsillectomy and adenoidectomy. We assume here that the adenoid tissue is also contributing to the infection, in addition to the tonsils. Prior to considering the adenitis as an indication, sinusitis, dermatitis, dental disease, or some systemic disease must be eliminated as the cause.

One sometimes encounters a child who is not "doing well"; there is a certain dullness in the behavior with lack of energy, as compared to the companions, which cannot be explained by the pediatrician. If the tonsil history is negative and the tonsils are benign in appearance, then they are ignored; but if the tonsil status is doubtful (chronic tonsillitis), then one may occasionally see much improvement mentally and physically in such an individual following tonsillectomy and adenoidectomy.—*Fitz-Hugh, Virginia M. Monthly, September '52.*

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### CHRONIC DISEASE AMONG AGED A GROWING PROBLEM

Good health is the responsibility of each person to himself and to his family. With the increasingly serious economic, sociologic and medical problems due to the growing number of older persons among the population of the nation, this rule cannot be over-emphasized.

At the end of 1952, there will be approximately 13,500,000 persons in the United States 65 years of age or over, according to John H. Miller, Springfield, Mass., vice president and actuary of the Monarch Life Insurance Company. This total is double the corresponding figure in 1930, and four times that in 1900.

Chronic disease among the aged is a serious factor, Mr. Miller wrote in the September 20 Journal of the American Medical Association, adding:

"Entirely too much of the discussion about chronic disease has centered on the responsibility of government, of the medical profession, and of society generally to the individual citizens in the field of health. While there is a social responsibility in the area of public health and a medical responsibility to provide adequate professional treatment, it should never be overlooked that, first and foremost, good health is the responsibility of each person to himself and to his family. Undue emphasis on social responsibility is apt to dull the sense of individual responsibility."

Statistics show, Mr. Miller said, that while older persons do not have many more sicknesses than the younger adults, the average duration of disability for the aged is much longer, reflecting an increase in the incidence of chronic illness with advancing age. In addition, the amount of hospitalization per capita of the age group 65 years and over is about four times that of younger groups.

Such diseases as rheumatism, cancer, cerebral hemorrhage and paralysis, and diseases of the circulatory system, the kidney and urinary system, and of the prostate are the most prevalent causes of disability and chronic illness, he reported.

The elderly patient, whose condition has become stabilized, may require only minimal medical care by a physician over a long period of chronic invalidity, as compared with the intensive treatment often needed by a younger person in an acute illness of short duration, according to Mr. Miller. However, he said, while the frequency of surgery does not appear to vary greatly by age, it is probable that in the older age groups the average case is more serious and involves greater expense.

The continually increasing number of older persons in the population and the care they will require has suggested that to meet their future needs, substantially increased hospital facilities and more physicians, especially those specializing in the care and treatment of the aging, will be necessary, Mr. Miller stated, adding:

"However, the growth in the requirements for medical care of chronic disease among the aging will be a gradual one and one that can be met in an orderly way.

"The problem of chronic disease among the aged is a large one, but there are also great resources with which to attack it on three fronts: medical treatment of the ill, preventive medical care of the well, and research. The history of medical progress since the beginning of the century offers abundant reason for hope that many more of the chronic diseases may be brought under control."

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### MEDICAL SCHOOLS AGAIN SET RECORDS FOR ENROLLMENT

Facilities for medical education in the United States are at an all-time high. There has been an unprecedented increase in teaching facilities since the end of World War II, and medical schools are receiving better financial support than at any other time in their history.

Barring a national disaster, such as an all-out war or a long depression, a further expansion of the facilities for medical education and the size of the medical student body is certain to occur.

This appraisal and prediction was made in the 52nd annual report on medical educa-



tion in the United States and Canada by the Council on Medical Education and Hospitals of the American Medical Association.

The report, published in the September 13 Journal of the A. M. A., was prepared by Dr. Donald G. Anderson, Chicago, secretary of the council, and his associates, Dr. Francis R. Manlove and Mrs. Anne Tipner.

Enrollment records for the 72 medical and seven basic science schools in the United States were broken in the last academic year for the fourth consecutive time, both for the number of new students enrolled and the total enrollment, the report pointed out. However, it added that for the second successive year, there has been a drop in the number of students applying for admission to medical schools. At the present time, there is a national average of less than three applicants for each available place in the entering class.

There were 27,076 medical students enrolled in United States schools in 1951-52, as compared with 26,186 in the preceding year, an increase of 3.4 per cent, according to the report. Last year's freshman class numbered 7,441 students, or 3.6 per cent more than the prior year, which set a record with 7,182.

In the five years before World War II, there was an annual average enrollment of 21,514 students. The present total represents an increase of more than 25 per cent. The five-year pre-war average of freshmen students was about 5,800. The latest figure is an increase of about 28 per cent.

There were 6,080 students graduated this year, a record number for a regular schedule. The total was surpassed only in 1947 when, at the termination of the wartime accelerated program, several schools graduated more than one class, and in 1951 when one school graduated an extra class, making that year's total 6,135. An estimated 6,500 students will graduate next year.

Of last year's enrollment, 11,436 students were veterans, or 42.2 per cent of the total. This represents a decrease of 3,092, or 13.2 per cent, compared with the year prior. The number of veterans in medical schools has been declining steadily, and the 1951-52 freshman class (22.5 per cent of the total) was the smallest admitted in any year since the end of World War II.

For the fifth consecutive year, the number of women medical students showed a decline. However, the proportion of women applicants accepted is the same as the pro-

portion of male applicants. The total number of women medical students in the last academic year was 1,471, or 5.4 per cent of the enrollment, as compared to 1,564, 5.9 per cent, in the preceding year. Peak total was 2,183, 9.1 per cent, in 1947. The number of women graduates last year was 351, or 5.7 per cent of the total, as compared with 468, 7.6 per cent the year before. A record of 612 women graduates, 12.1 per cent, was set in 1949.

More than \$300,000,000 has been spent in expansion of medical school facilities since the end of the last war, the report stated. In addition, there are 13 projects now in various stages of development that are aimed at founding new schools or expanding some of the two-year basic science schools to four-year schools. Total funds for operating the schools, including research, increased in the past year from \$109,000,000 to \$120,000,000.

"In the period after the war, medical schools and medical educators were subjected at times to severe and unfair criticism for not expanding their facilities more rapidly or extensively," the report said. "It is to the credit of the medical schools that they insisted that, if proper standards were to be maintained, increases in enrollments would have to be accompanied by the provision of additional capital facilities and by additional operating funds.

"It is equally to the credit of the American public that it was willing to increase its investment in medical education so that additional students could be accommodated without lowering the high standards of medical education that several generations had striven to create in this country.

"Through increased legislative appropriations, federal grants in aid, gifts for endowment and current expenses, alumni funds, and, more recently, the efforts of the National Fund for Medical Education and the American Medical Education Foundation, the funds available to the medical schools have been more than doubled since the end of World War II."

Although it was pointed out that some schools still lack adequate basic budgets, the report stated that "medical education is better supported today than at any time in its history and American medical schools as a group are conducting programs of education and research that far surpass both qualitatively and quantitatively any of their previous efforts."

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## THE PHYSICIAN'S RESPONSIBILITY WHEN A PATIENT CONSULTS HIM ABOUT HIS HEART

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When a patient consults a doctor about his heart there are two questions that the doctor should answer: first, does this patient have heart disease; and, second, if he has heart disease, what should be done about it? Of the two questions, the first is easily the more important. Man has always regarded the heart as an organ of considerable importance, as is evidenced by the lover who loves with all his heart; the poet who writes "My heart leaps up when I behold a rainbow in the sky"; the song writer who contrives "My heart belongs to Daddy," and the statesman who admits "There are times when the heart speaks when the mind cannot tell." In recent years, following the brilliant work of Herrick, which put coronary thrombosis on a recognizable basis, the layman has learned to identify the heart with sudden death. He now looks on the most marvelous pump in the world with a sense of uncertainty and fear. Each morning he reads in the paper where a friend or a prominent public figure has died of a heart attack. Not all, but many of the readers rush to the physician to inquire about their hearts. To these unhappy individuals, and all others who consult a physician about their hearts, the answer must be definite: They do or do not have heart disease.

Uncertainty about any medical problem is never good, but with respect to the heart it is devastating. The physician who hides his uncertainty under such vague language as "you have a slight heart condition" condemns his patient to a life of anxiety and worry, which reduces some unhappy souls to complete invalidism. When a patient consults a physician about his heart, the physi-

cian must take the necessary steps to determine whether he has heart disease or not. Often a good history and a careful physical examination are all that are necessary to make this decision. I must say in passing, however, that generally the public has come to view with such alarm anything that relates to the heart that some individuals may not be satisfied with these simple measures. If the physician detects this uncertainty, he must make other diagnostic tests which he does not feel are actually necessary. Having these tests made and the expense incurred in making them are often most reassuring to patients with deep seated anxiety about their hearts. Again, the patient's complaint and the findings in his heart may be so complex that many additional examinations must be made in order to arrive at a decision. The physician should not stop until all necessary steps have been taken. This may require the services of a consultant, but there must be no hesitation until a decision has been made. Sometimes the history related by the patient may be of sufficient clarity to establish a diagnosis of heart disease although the physical findings and diagnostic tests do not show any evidence. In such cases the diagnosis must be made on the history alone and the patient given the diagnosis and advised as to the necessary steps in treatment. Finally, there will be some cases in which, after the greatest care, exhaustive studies and consultation, the physician may still have a doubt as to whether the patient has heart disease or not. If the physician is certain that he has exhausted every means of study and the accumulated evidence is still not sufficient



to establish a diagnosis, I feel that such patients should be told that their hearts are sound and they should be advised to live in accordance with their age and physique. Perhaps they should be advised to return at intervals for reexamination.

The second question, "What must be done about it," which arises when a positive diagnosis of heart disease is made, is not so difficult. The doctor has been supplied with so many excellent measures for treating heart disease in the past thirty years that he can look with considerable assurance and hope of achieving a good result in giving the patient relief. Nothing is more reassuring and satisfying than to treat a patient in his first episode of congestive heart failure and to see the great relief he gets from the treatment. Many of the treatments are fairly well standardized now, but the doctor can exercise great skill and art in applying these measures in just the right amount and in the right combination. Recent advances in surgery of the heart have offered hope and relief to many cases that were heretofore hopeless. One only has to look back among his patients to see many of those who have had occlusions of a coronary artery now holding responsible positions and leading useful lives.

I cite these examples of the many satisfactory results that are achieved in the treatment of heart diseases because I feel that a physician should look toward diseases of the heart with a sense of assurance and he should impart this assurance to his patient. It is difficult to prove but it is my firm belief that the patient who lives with a feeling of assurance and hope, rather than anxiety and dread, and the one who is usefully employed, even though limited, rather than reduced to invalidism, will live longer and certainly more happily. Of necessity some diseases of the heart require that the patient's activities be restricted. The necessary restrictions should be made clear to him, but within these limitations he should be allowed to be active. Finally, it is my hope that as physicians learn more about diseases of the heart they can look on them with a greater hope and assurance, and the patient can be taught to look on this wonderful organ with a feeling of security; that he will again use the term stout hearted and look on the heart as a site of courage.

**Suicide**—A phase of the suicide problem with which the physician is often directly concerned is the diagnosis and treatment of attempted suicide. It is important first to differentiate between the true suicidal attempt and the pseudosuicide. In the latter the attempt at suicide is not genuine, rather the patient is using this means to express a need for assistance. These pseudosuicidal attempts should not be taken lightly, since brushing aside such a patient may result in a subsequent successful suicidal attempt.

Nearly 80% of all suicides are by violent methods. Many of these are problems for the coroner rather than the physician. The well-known principles of traumatic surgery must be applied to the others. Deaths by poisoning constitute approximately 20% of suicides, and attempted suicide by poisoning presents a challenge to the physician who is called to aid. Carbon monoxide poisonings comprise nearly half of the poisonings. The average physician is relatively infrequently faced with the problem of treating carbon monoxide poisoning, however, since the victim is often dead on the physician's arrival or already resuscitated by first aid workers. Barbiturate ingestion, on the other hand, is followed by a latent period before symptoms appear, allowing the physician to intervene and attempt to alter the outcome favorably.

In instituting treatment for poisoning, the specific poison must first be identified if possible. Then, steps may be taken aimed at evacuation of the poison from the gastrointestinal tract, inactivation of residual poison, elimination of absorbed poison, and symptomatic treatment. In the urgency of the situation some basic precautions are frequently overlooked. Emetics are contraindicated if the patient is in deep coma, because of the danger of aspiration pneumonia. Neither emetics nor cathartics should be employed when a poison has damaged the gastrointestinal mucosa. The passage of a Levine tube is dangerous when strong acid, alkali, or caustic poison has been ingested and in strychnine poisoning, when it may provoke convulsions.

Carbon monoxide poisoning is best handled by removal of the patient from the contaminated environment, administration of oxygen through a clear airway, and artificial respiration, if indicated. In the treatment of barbiturate poisoning recent work by Nilsson is of interest. Nilsson postulates that the usual analeptics and respiratory stimulants are contraindicated in barbiturate poisoning, since they increase the oxygen demand of all tissues and thus add to the cerebral hypoxia. Nilsson stresses the necessity for maintenance of a clear airway and correction of hypoxia, and the mortality rate in his large series of patients with severe barbiturate poisoning who had been unconscious more than 24 hours was only 4.2%, compared to a mortality rate usually in excess of 15% for severe cases in other series.

... Since the popularity of various poisons varies at different times and new poisons are introduced as by-products of technological advances, the physician must constantly review both his knowledge of these agents and the best methods of treatment available.—*Editorial, J. A. M. A., Oct. 18, '52.*

## RECOGNITION AND MANAGEMENT OF COEXISTENT ABDOMINAL DISEASE AND CARDIO- VASCULAR LESIONS

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Digestive disturbances occur with great regularity in patients with heart disease. Quite often the discomfort which patients experience is so complex and bizarre that the responsible physician is sorely taxed to decide with certainty whether the symptoms arise from disorders below the diaphragm or from cardiovascular structures themselves.

Nevertheless, the successful management of cardiac disease demands a sensitivity and alertness on the part of the physician to the possibility of concurrent gastrointestinal disease. Although it has long been widely recognized that a reciprocal relationship exists between these two vital portions of the body, the exact mechanism remains largely a matter of theories, inferences from animal experimentation and to a large extent subjective opinion on the part of clinicians.

I would like to document further the fact that abdominal symptoms occur in patients with heart disease and that the proper interpretation of these symptoms improves the outlook for these individuals.<sup>1</sup> As a corollary to this observation I hope to demonstrate that correction of abdominal disease may induce reversal of the otherwise downward trend of the cardiac patient.

The following case summaries are illustrative:

1. Mrs. HPF, a forty-nine year old white female, began to have exertional dyspnea in 1949, followed in a three to four month period by orthopnea, ankle edema and xiphoid pain of a crushing nature when she exerted herself. These symptoms became progressively worse until she was admitted to a hospital with advanced congestive failure in 1951. Examination confirmed the presence of obesity, dependent edema, pulmonary edema, cardiac enlargement, hepatomegaly, abdominal tenderness, auricular fibrillation and abnormal electrocardiographic findings. Moderate diastolic hypertension was present. The entire picture improved on imposition of the usual cardiac regimen and she remained in good general condition for another year but required digitalis and frequent injections of mercurials.

1. White, P. D.: Differential Diagnosis of Gastrointestinal and Cardiac Disorders (The Alvarez Lecture), *Am. J. Digest. Dis.* 4: 650, 1937,

The continuance of high epigastric pain led to investigation of the gallbladder which was found to be a normally functioning, stone-filled organ. At this admission the patient was found slightly jaundiced. After thirty-five pound weight loss had been accomplished, cholecystectomy was performed, with exploration of the common duct and removal of stones therefrom. The patient made a smooth postoperative recovery, maintained her weight loss, and has in the eight month interim required no digitalis or mercurials and is able to follow her usual amount of housework free of symptoms. Interestingly, there is at this time an electrocardiographic tracing found to be within normal limits.

Comment: Aside from the usual management and weight reduction it is apparent that removal of a diseased gallbladder and exploration of a stone-bearing choledochus exerted a strikingly beneficial effect on this patient in whom xiphoid and substernal pain had been improperly ascribed entirely to heart disease.<sup>2</sup>

2. Mr. CSB, a fifty-eight year old retired miner, had suffered a typical posterior myocardial infarction in 1947 and had experienced chest pain on effort since that time. It is difficult to dissect his story of pain into all of its components. Most of it came on exertion but there was frequently noted considerable epigastric distress occasionally relieved by food and alkalis. Examination revealed normal blood pressure and physical findings on cardiac study. The abdomen was tender. There were electrocardiographic findings compatible with and suggestive of coronary insufficiency. X-ray studies demonstrated a duodenal ulcer. This proved refractory to standard intensive medical therapy. Eventually a subtotal gastric resection was performed with relief not only of his abdominal but also the precordial distress thought due to coronary insufficiency. Although the more recent electrocardiographic changes appear improved, it is impossible to base any real evidence on this.

Comment: I think several facts should be pointed out in connection with cases of this type. Removal of offending gastroduodenal ulcers often relieves some of the symptoms of coronary insufficiency. Certainly the fact that a patient has coronary insufficiency does not necessarily establish his in-

2. Walsh, B. J.; Bland, E. F.; Taquini, A. C., and White, P. D.: The Association of Gallbladder Disease and of Peptic Ulcer with Coronary Disease; a Postmortem Study, *Am. Heart J.* 21: 689, 1941.



operability. In fact, it appears that coronary insufficiency may constitute a relative indication for surgery in these old, difficultly healed arteriosclerotic gastroduodenal ulcers, provided of course that other contraindications do not exist.

3. Mr. JBC, a fifty-five year old white male, was admitted with the classic symptoms and electrocardiographic validation of acute posterior myocardial infarction in December 1950. He had a past history of epigastric distress bearing the ulcer rhythm. During the ambulatory convalescence from his cardiac infarction he experienced recurrent ulcer type distress which was at times precordial and impossible to distinguish from heart pain. A vigorous hourly milk-feeding program was instituted which eventuated in radiologic evidence of healing ulcer. His distress disappeared right from the start of ulcer therapy.

Comment: Ulcers are often reactivated by any stressful situation such as an infarct of the heart. The outpouring of adrenal corticoids acting on the gastric secretory mechanism over a period of several days has been shown repeatedly to give rise to ulcers in susceptible individuals. All persons suffering myocardial infarcts should have the past history cleared with respect to ulcer symptoms and x-ray studies made in suspected cases as soon as ambulation is permitted. Every effort at strict dietary control must be imposed. The pain of the active ulcer unquestionably affects the heart situation adversely. Conversely, the correction of this situation is usually not only possible but ameliorates the healing of the cardiac insult.

4. Mr. FCR, a forty-nine year old white man, has suffered with chronic congestive failure since early 1949. Varying amounts of digitalis had been required for his refractory auricular flutter. In midsummer 1951 he began to feel very nauseated and was given another type of digitalis glycoside in what appeared to be normally adequate dosage. His nausea and incipient cardiac cachexia progressed despite the daily administration of 0.1 milligram of digitoxin. This drug was stopped and for the next ten days vomiting became worse. Serum potassium value during the latter part of this ten day period was 3.6 milliequivalents per liter. Large doses of rapidly excreted digitalis glycoside were administered—the total reaching almost heroic proportions. 0.8 milligram of Lanatoside C was given every eight hours for six days—a dose vastly in excess of ordinary therapeutic standards. Potassium was given parenterally and the vomiting stopped after approximately forty-eight hours. The patient has been fully rehabilitated to normal useful activity for the past eighteen months on one and one-half to three grains of digitalis leaf daily.

Comment: All nausea in patients taking digitalis is not due to the drug. Heart failure may be progressive in the face of inade-

quate digitalization. Congestion of the liver and intestinal tract may and does give rise to intense retching nausea. The supervention of vomiting brings in another factor to disturb the already precarious electrolyte status of the patient. In this case we can continue the illustrative trend in showing that trouble above the diaphragm may lead to symptoms below that organ.

5. Mrs. JCY, a sixty-six year old white female, has been on liver extract weekly for eight years for "pernicious anemia." Nitrites have been concurrently used for substernal distress thought to derive from coronary disease which in turn was aggravated by the pernicious anemia. The blood pressure had been found elevated and the electrocardiogram abnormal. Studies of the upper gastrointestinal tract were reported normal in the past. At this time the patient was placed in the Trendelenburg position and "strained down" (so-called Valsalva maneuver) while under fluoroscopic observation. A small hiatal hernia was found, and peptic ulceration of this tiny hernia led to repeated bouts of gastrointestinal bleeding, chronic anemia, and the mistaken diagnoses of pernicious anemia and coronary heart disease. Under a medical program of rehabilitation she was made to lose weight and replace iron losses on a daily ration. She has been relieved of pain entirely and the anemia is corrected.

Comment: Hiatal hernia may give rise to symptoms indistinguishable from coronary artery disease. There is a high degree of correlation between the incidence of the two entities. Treatment for coronary disease will not help hiatal hernia, however, and the latter deserves a direct medical or surgical approach. Jones<sup>3</sup> has shown that small hiatal hernias are more apt to give rise to symptoms than are the large ones. It therefore behooves us to increase our demands upon radiologists that they discover the small hernias that cause trouble and mistaken diagnoses. Small hernias are often missed on routine radiography. It requires extra time to place the patient in the Trendelenburg position and to accomplish the Valsalva experiment in order to bring out the majority of small hernias.

6. Mr. CSG, a sixty year old railway engineer with several proved myocardial infarctions. His chest and epigastric distress were confusing. Numerous x-ray studies of his upper gastrointestinal tract were found negative. Finally, gastroscopic study revealed a vicious degree of hypertrophic gastritis. Operative approach to the problem was made but at time of surgery his condition did not appear to warrant actual extirpa-

3. Jones, C. M.: Hiatus Esophageal Hernia, with Special Reference to Comparison of its Symptoms with Those of Angina Pectoris, *New England J. Med.* 225: 963, 1941.

tion of the stomach. Medical therapy was instituted and has given considerable relief of all types of pain whether of gastric or coronary origin—or both.

**Comment:** It is well to appreciate that the modality of radiology has definite limitations, both from the standpoint of negative and positive findings. In an occasional patient a gastroscopic study will elucidate a problem of pain which is not developed by the x-ray method, and may, in cardiac patients, prove useful in their management.

7. Mr. RF, a fifty year old newspaper man, experienced a typical myocardial infarction. He underwent smooth convalescence until troubled by left chest pain and constipation which required the use of laxatives and enemas. His left chest pain was temporarily relieved by expulsion of feces or flatus. His symptoms were aggravated by a full meal, particularly early in the morning. Being an apprehensive man he interpreted his own pain as that of coronary origin despite his several years' history of similar distress antecedent to the actual infarction. He was treated with belladonna, frequent small feedings, and hydrophilic colloidal laxative in place of both cathartics and enemas. Fear of cardiac pain was allayed to some extent by reassurance but chiefly by the fact that the distress almost entirely cleared on this irritable colon program.

**Comment:** The irritable or spastic colon problem is universal and inevitably occurs in many patients with known heart disease. Whether spasm of the gut gives rise to reflex coronary constriction or not, these patients will derive great relief and reassurance if their abuse of laxatives and enemas can be overcome and a saner habit cultivated. Gastrointestinal spasm is so common that I feel that the liberal use of atropine in such instances is desirable. Experimentally, atropine negates the vagal reflex spasm which results in restricted coronary flow.

8. Mrs. EH, a sixty-two year old white female, had undergone in 1950 two years of terrifying recurrent episodes of paroxysmal rapid heart action. Her physical condition was normal and studies of cardiac function were within normal limits. Nevertheless, control of the seizures had been impossible. In the course of her evaluation a non-functioning stone-bearing gallbladder was found. Cholecystectomy was accomplished. She has had no further spells in two years.

**Comment:** The inciting mechanism of paroxysmal auricular tachycardia or other arrhythmias is of course undetermined. It has been possible to study the effect of gallbladder dilatation on the cardiac mechanism during surgical procedures on the former. Arrhythmias can readily be induced at times by this stretching of the gallbladder itself—an effect which may be abolished by atropine. This implies a reflex effect upon the

heart. In some cases it may be possible to remove a diseased gallbladder and abolish an arrhythmia. Lest enthusiastic surgeons be thus overly encouraged to operate for cardiac arrhythmia it must be stated that gallbladders must satisfy ordinary criteria for removal before this is urged. Only inflamed or stone-bearing organs should be removed in patients otherwise in suitable condition. It would be cruel and foolhardy to promise such relief from gallbladder surgery. This case is included merely to illustrate that it may sometimes occur.

#### SUMMARY

These cases are selected examples of cardiac patients in whom successful outcome has hinged on the recognition of gastrointestinal disease or in whom gastrointestinal symptoms have required a different approach to the primary cardiac problem. Certainly, all patients with heart disease deserve careful clearance with respect to the commoner varieties of gastrointestinal situations. This seems especially true in patients suffering with coronary artery insufficiency or congestive heart failure, and is particularly significant during the convalescent phase. In many instances it will be impossible to distinguish with certainty the origin of certain symptoms. The radiologic demonstration of ulcers, hiatal hernias and gallstones will turn up quite a good many opportunities for medical and occasionally operative rehabilitation.

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**Acute Craniocerebral Injuries**—An emergency examination is seldom indicated in the treatment of injuries of the skull and brain. Should there, however, be a question of a depressed fracture of the skull, it may be made on admission of the patient to the hospital. It may be of aid in diagnosing an extradural hemorrhage when a fracture line crosses the groove of the middle meningeal artery. With these exceptions, an emergency roentgenogram is of doubtful value except to satisfy the curiosity of the physician and of the family. It is useless to make a roentgen examination of a patient who is unconscious and restless when his condition is of such serious nature that it probably will be fatal in a short time. Roentgen examination of a restless semiconscious patient is of little value because of the poor quality of the picture, and the mere demonstration of a linear fracture would not change the method of treatment. Frequently roentgenograms of the skull are made some days after the injury, depending upon the patient's condition. On roentgen examination, one should look for displacement of the pineal body, because a localized compression from subdural or extradural hemorrhage may displace it to the opposite side. —*Lyerly, J. Florida M. A., Oct. '52.*



## MYOCARDIAL INSUFFICIENCY AND RELATED DISORDERS

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Before entering into a discussion of this subject it might be well to ask the question "What is a normal heart?" There might be several answers to the question, all of which would be acceptable. However, the one which I wish to use here is that a normal heart is one which can deliver on demand the required quantity of blood to any or all parts of the body with the least amount of discomfort for the proper functioning of its organs. Any deviation from these requirements is called a cardiac disorder. The disorder may be so mild in nature as to be scarcely noticeable except on sudden exertion, fright or some emotional disturbance. Then again it might be so profoundly severe as to cause complete cardiac decompensation and death. In all cases the heart action has been so disturbed as to interfere with its normal functioning. It will be the scope of this paper to deal only with changes in the muscle and circulatory system of the myocardial wall.

Myocardial insufficiency, as is well known, is a disorder of the heart muscle generally brought on by preexisting or coexisting conditions. In the acute form it is usually induced by an acute infection, such as pneumonia, rheumatic fever, measles, scarlet fever, diphtheria, smallpox and many other septicemias. Then again it might spread from extension of inflammation of the lungs, pleura, mediastinum or pericardium. Rarely, this condition may be primary but many doubt this to be true, although the cause may never be discovered. Virus etiology has been considered by some, although this has not been proven in man.

The myocardium generally contains various sizes and numbers of lesions, which may be focal in nature or diffuse throughout large areas. Muscle cells often degenerate, and between them many leukocytes, lymphocytes and plasma cells appear.

These hearts are generally dilated, flabby and somewhat paler than normal. The diagnosis of acute myocarditis, when accompanied by some infections, is sometimes difficult, due to the fact that symptoms of the coexisting disorder overshadow the cardiac picture. At this time, reliance should be

placed chiefly on evidence brought out by electrocardiograms. Tachycardia is usually present and there may be weak pulse, marked arrhythmia, dyspnea, and precordial pain simulating infarction. Nausea and vomiting are common. In some patients the symptoms are so mild that the only evidence to be had is through electrocardiograms. The heart sounds are variable. The apex beat is often feeble and wavy. The first sound may be quick and sharp; and often a systolic murmur is heard. In late stages the skin becomes cold, clammy and pale.

In the primary form of myocarditis onset may be abrupt, soon become alarming, and death may occur. In some, however, the onset is more gradual, the symptoms less severe, the course more prolonged, and finally terminating in congestive heart failure. Some of these cases, even with severe symptoms, eventually recover with no cardiac disability, while others terminate in chronic heart disorders.

Diagnosis of acute or subacute myocarditis is made from the clinical picture of the above symptoms, corroborated by confirmatory evidence of electrocardiograms. In many cases of virulent infectious disease, it is difficult to determine if there is actually myocarditis causing cardiac failure.

As to chronic myocardial insufficiency and chronic non-valvular heart disease the picture is somewhat different. For practical purposes these are divided into two groups: first, those with extensive foci of fibrosis throughout the entire myocardium, and second, those with smaller patches of fibrosis covering smaller areas. In this second group will be found an overwhelming majority of chronic myocardial disorders, increasing in frequency until after fifty (50) years of age. They probably outnumber all chronic non-valvular heart diseases in frequency.

Chief concern will be given this second group which may again be divided into two sub-groups—those with and those without hypertension. It is generally believed by many physicians that most all cases of chronic myocardial insufficiency are accompanied by hypertension or that hyper-

tension has existed previously. This, however, is contrary to the writer's experience. It is true that many of the cases are hypertensive, but I find many of these chronic myocardial disorders not only non-hypertensive but a few are actually hypotensive. A few years ago a business man sixty-four (64) years of age, weighing 240 pounds, came under my care suffering with a very definite and pronounced chronic myocardial insufficiency. Blood pressure was 114-78. For the next four years systolic pressure ranged between 112 and 120. Worry or excessive muscular activity would easily precipitate an attack in which the pulse would become markedly accelerated and weak; and the skin cold, clammy and ashen in color.

The changes most common to all these types of heart disorders is hypertrophy brought on by increase in size of muscle fibers, thereby thickening the heart wall and dilating the chambers of the heart. Very often the muscle cells undergo degeneration of various types, and again they are normal in appearance and the only pathology noticeable is an increase in size of muscle cells. In some of these cases it is difficult for the pathologist to explain why decompensation should occur with such slight pathology of heart muscle. The best probable answer is that increase of myocardium causes an increase in size of the heart chambers and, with this increase, there is a corresponding increase in the amount of blood to be moved at each systole. Then a residual amount of blood is left at each diastole and as this goes on there is a steady increase in the residual blood, causing additional work to maintain the circulation. Finally, inability to keep up this increase in work terminates in circulatory failure.

As mentioned, the muscle fibers are much enlarged with no increase in peripheral capillaries, which results in some degree of ischemia. The pathology is many times without a satisfactory explanation as to the cause. However, it is thought acute myocarditis resulting from various infections and hypertension of long standing is the most frequent factor responsible for chronic myocarditis.

A case came under the writer's care, a sixty eight (68) year old physician who had suffered with myocardial disorder for many months. Against the advice of a number of his colleagues he insisted on and persisted

in his usual activity. On his return from a busy day's activity he began suffering precordial discomfort. I was called to attend him at 10:00 o'clock at night, and found him suffering much precordial pain and discomfort. While I was taking his blood pressure (which failed to register), his heart stopped and he fell to the floor. He was then removed to bed and after careful examination no vestige of pulse or heart sound could be felt or heard. Within three minutes one ampoule of caffeine and sodium benzoate was injected into the myocardium. Within another three minutes a thready pulse could be felt and in thirty (30) minutes this increased in volume, heart sounds were easily heard and the man was able to talk. He died twenty-four (24) hours later with myocardial failure.

The coronary system is one of the very vulnerable parts of the cardiac mechanism. As early as 1878 Hamner described the first case of coronary occlusion during life. Then, because of vague conceptions relative to the coronary system, this work was at a standstill until 1912 when Herrick presented enough evidence derived from his own experience and that of others to convince the medical world that coronary occlusion within itself was a distinct clinical entity. A few years later the pathologist learned to screen these coronary disorders more carefully and it was discovered that many so-called acute indigestion cases were really acute coronary accidents. Electrocardiographic study shows that myocardial infarction is not necessarily shown by critical illness or prolonged anginal pain, but its presence is evidenced by necropsy findings of more or less localized areas of myocardial fibrosis. In these infarcted areas and in coronary narrowing it is now known that in many of these cases the circulation may adapt itself by revascularization to such an extent that ordinary activities of life may be carried on with little handicap.

In coronary sclerosis, if well compensated, there is no clinical evidence but as the condition progresses there is loss of cardiac reserve, resulting from increased fibrosis, causing a clinical picture of a decompensating heart. This continual narrowing of the coronary arteries produces ischemia of the myocardium, which becomes more pronounced on exertion; and if occlusion takes place, there is myocardial infarction and severe anginal pain.



In many of these coronary disorders the objective signs may be completely lacking and in some cases even the electrocardiogram is normal. Diagnosis of the disorders of the coronary system is sometimes difficult, especially if pain is of short duration. However, if there is a history of repeated attacks of epigastric or substernal pain lasting 15 to 30 minutes disappearing sometimes with or without medication, these attacks coming on at irregular intervals over a period of time, coronary disorder is strongly suggested. I would like to emphasize at this point the importance of carefully screening the diet. It is the writer's opinion that many of these cases of epigastric and low substernal pain are brought on by gross errors in diet. A few months ago a man of twenty-five (25) came into my office suffering intense pain in the epigastrium, radiating to the lower anterior chest. There was marked dyspnea. He gave no history of previous attacks, other than fullness after meals, but he did give a history of having drunk six bottles of cold drinks within two (2) hours previously and that immediately following an ordinary meal. Objective findings were negative except for an enormously distended abdomen, most marked in the epigastrium. In the absence of an electrocardiographic reading this man was given a heavy dose of antacids to which he quickly responded.

In treating these cases much can be done toward alleviating the distress and discomfort, provided thorough cooperation may be obtained. All the cases should obtain as complete rest as possible, and if restlessness or insomnia exists light sedation should be given. Small doses of barbiturates should be started at first. Later, if heavier sedation is needed, small doses of morphine, in the writer's opinion, give better results. Liquids are given cautiously, only sufficient to offset dehydration. A soft bland diet, with a liberal supply of carbohydrates, is prescribed. If perspiration is free, glucose in normal saline intravenously is administered. If anemia develops, blood and plasma are of decided value.

As to cardiac stimulation, if auricular fibrillation develops, digitalis may be given with caution. If, however, there is no fibrillation it is contraindicated. Coramine may be tried. On sudden cardiac failure the writer depends largely on caffeine or camphor.

#### SUMMARY

Myocardial disorders play an important

role in heart diseases. They may be recognized by the clinical picture, electrocardiograms, objective findings, and past history as regards infectious diseases.

The coronary system is subjected to various disorders, the most important of which are sclerosis and occlusion. These may be suspected in mild precordial pain, although they may be ushered in by most profound symptoms and death.

There is no doubt that mistakes have been made in confusing symptoms of the above disorder with acute indigestion. Especially is this true when there is low substernal pain radiating to the epigastrium. However, it is only after carefully scrutinizing the diet, past history of stomach disorder, and proper electrocardiographic readings that we are able to arrive at a proper diagnosis.

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**Hospital Insurance and Medical Care Insurance**—One of the most significant developments in the total medical care picture during the past twenty years is the amazing spread of the prepayment hospital and medical care insurance program. At the time of the inception of the program it seemed to be the consensus that the saturation point was about 16 per cent. This gave the social planners ample support in their argument that the voluntary system would never work, but that the government would have to do it. After a brief period of fifteen years we see a picture where over 80 million persons in this country have some protection against hospital costs. Whereas, there are not as many who also have medical care coverage, the figure is rapidly growing and is almost paralleling the curve of the former, taking into consideration the later and slower start made by the Blue Shield. We cannot relax in our efforts of selling the American people on the principle of doing the job for themselves on a private initiative basis, and shouldering the responsibility of taking care of their own sickness costs in the traditionally American manner. Only in this way can we successfully defeat the socializers who would regiment the American people in the pattern of foreign ideologies. The critics of our plan say the coverage is inadequate, the coverage is not broad enough, and that it does not reach that segment of the population which needs it most. The medical profession is the first to recognize the fact that there are still defects in the plan, but these defects are capable of being remedied. These defects which readily come to mind are (a) coverage for the older age group; (b) coverage for long lasting illnesses. Already, in several areas in this country, particularly in California, the profession is conducting experiments in these areas. Solution, in my judgment, is purely a question of time. The sale of policies for this type of protection should not be made until and after sufficient and convincing actuarial data are available so that the financial solvency of any plan will be safeguarded.—*Gunderson, Connecticut State M. J., Oct. '52.*

# VIRUS INFECTION DURING PREGNANCY AS THE CAUSE OF CONGENITAL MALFORMATION OF THE HEART

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The real purpose of this article is to plead for a common sense approach to the problem of therapeutic abortion in mothers who have a virus infection during the early stages of pregnancy. It seems to me that in recent years the younger obstetricians have been too quick to suggest termination of pregnancy in young mothers who have rubella (German measles) during the first trimester of pregnancy. The opinions expressed herein are my own, gathered from a summary of the literature and from personal experience in twenty-six years of pediatric practice.

Our knowledge of the etiology of congenital malformations is gradually evolving from the superstitious to the scientific. Josef Warkany, of Cincinnati, in 1947 mentioned such causes of congenital malformation as genetic, nutritional, chemical, endocrine, actinic, infectious and mechanical factors. Under the infectious causes the virus type diseases have been the guiltiest.

In 1941 Gregg of New South Wales reported seventy-eight cases of congenital defects due to rubella (German measles) occurring in mothers during the early stages of pregnancy. The majority of defects recorded by Gregg were of the eyes and the heart. Since Gregg's report many other authors have related cases of congenital defects following rubella especially, but cases have also been reported following poliomyelitis, infectious hepatitis, chickenpox, smallpox, mumps, influenza, herpes simplex and other virus diseases. In the majority of the reports studied, malformations of the heart have a prominent place. While many various types of malformations of the heart have been cited, the most common one reported is patent ductus arteriosus. This, as we now know, is easy to diagnose and can be completely cured by surgery. In my personal experience with several hundred varieties of congenital anomalies it is very rare that I can elicit from mothers the history of having had German measles or any other type of virus infection during early pregnancy.

An exhaustive study of congenital defects in infants following infectious diseases dur-

ing pregnancy has been made by Swan and his co-workers and reported in the December 1946 issue of the Medical Journal of Australia. The total number of cases recorded was 120, summarized in part as follows:

The nature of the maternal infection was as follows: rubella, 111 cases; rubella and morbilli, one case; rubella and "soldier's" ("Woodside") throat, two cases; rubella and mumps, three cases; rubella and varicella, one case; doubtful rubella, two cases. (In the two doubtful cases the diagnosis lay between rubella and morbilli.)

The following was the time of onset of the maternal infection (the number of cases in which the infection was followed by congenital abnormalities is shown in parentheses): the month preceding conception, two (0) cases; first month of pregnancy, 20 (19) cases; second month, 42 (40) cases; third month, 23 (21) cases; fourth month, eight (seven) cases; fifth month, seven (four) cases; sixth month, six (three) cases; seventh month, five (two) cases; eighth month, three (two) cases; ninth month, two (one) cases; month indeterminate, two (two) cases.

Of the congenitally defective offspring 57 were males and 44 females; of the normal offspring eight were males and 10 females; the sex of one child is not known.

The various abnormalities had the following frequencies: microcephaly, 62 cases; heart disease, 52 cases; deaf-mutism, 48 cases (one child suffered from deafness only); cataract, 18 cases (12 bilateral, 6 unilateral); mental deficiency, five cases; strabismus, four cases; cryptorchidism, four cases; inguinal hernia, three cases; spina bifida occulta, three cases; high-arched palate, three cases; mongolism, two cases; speech defect, two cases; epilepsy, two cases; cleft palate (soft) two cases; pyloric stenosis, two cases; buphthalmos, one case; hypospadias, one case; hydrocele, one case; bifid sternum, one case; spastic diplegia, one case; bilateral optic atrophy, one case; lack of closure of the chorioid fissure of the eye, one case; naevus, one case; Horner's syndrome, one case; hemiparesis, one case; umbilical hernia, one case; obliteration of bile ducts, one case; azygous lobe of lung, one case; fusion of upper ends of radius and ulna, one case; talipes equinovarus, one case.

Consensus seems to indicate the following average period of pregnancy, when rubella occurred:

|                                |               |
|--------------------------------|---------------|
| For cataract .....             | 6 weeks       |
| For deafness .....             | 9 weeks       |
| For cardiac malformation ..... | 5 to 10 weeks |
| For deformed teeth .....       | 6 to 9 weeks  |



SUMMARY OF THE RESULTS PUBLISHED BY  
GRONVALL AND SELANDER (1948)

| Type of Infectious Disease | Infection Occurring During First 3 Months of Pregnancy |                      |                                |        | Infection Occurring After First 3 Months of Pregnancy |                      |                                |        |
|----------------------------|--|----------------------|--------------------------------|--------|---|----------------------|--------------------------------|--------|
|                            | Total No. of Children                                  | Aborted or Stillborn | Liveborn but with Malformation | Normal | Total No. of Children                                 | Aborted or Stillborn | Liveborn but with Malformation | Normal |
| Rubella                    | 13   | 2                    |                                | 11     | 15  | 1                    | 1                              | 13     |
| Measles                    | 4  | 2                    |                                | 2      | 16  | 1                    |                                | 15     |
| Varicella                  | 4  |                      |                                | 4      | 9   | 1                    |                                | 8      |
| Mumps                      | 6  | 1                    | 1                              | 4      | 28  |                      | 4                              | 24     |
| Acute hepatitis            | 10   | 1                    | 1                              | 8      | 19  | 3                    |                                | 16     |
| Poliomyelitis              | 15   | 7                    | 1                              | 7      | 23  | 4                    | 1                              | 18     |
| Scarlet fever              | 3  |                      |                                | 3      | 10  |                      |                                | 10     |
| Herpes zoster              | 2  | 1                    |                                | 1      |   |                      |                                |        |

I would like to report briefly three cases in which I am sure the mothers did have rubella during the early stages of pregnancy.

REPORT OF CASES

1. Mrs. McC. This young woman, while an interne at the Children's Hospital, developed German measles at about the fourth week of her first pregnancy. A boy was born, perfectly normal in every respect except for bilateral congenital cataract. In her case the diagnosis of rubella was very definite and exposure was complete, as there were several cases of rubella in the hospital at the time and there was an epidemic of this disease in the city. Following her first child, this mother had two other perfectly normal children. About two years ago she became pregnant for the fourth time. When she was about six weeks pregnant she developed chickenpox, and on recovery a therapeutic abortion was done. In this particular case I consider that the abortion was justified because of the extreme anxiety of the mother, having had one child with congenital cataract following a virus disease and having two normal children. The anxiety in her case was perfect justification, I feel, for the therapeutic abortion.

2. Mrs. D. E. F., age 21, developed definite rubella in about the third week of pregnancy. The child was born with bilateral coloboma and patent ductus arteriosus. At the age of six years the patent ductus was closed surgically and the child is in good condition at the present time. Also, she has one other child who is perfectly normal, born two years following the birth of the first child.

3. Mrs. P. E. W. This mother had two previous children who were normal. In about the fifth week of her third pregnancy she developed a definite rubella. A baby girl was born and this child had a microthalamus of the left eye and a patent ductus arteriosus. The patent ductus was surgically closed successfully at the age of seven years.

DISCUSSION

In my experience I know of two cases in which the mothers were supposed to have had rubella in the early stages of pregnancy. A therapeutic abortion was done and at autopsy of the fetus no pathology could be found. There are reports, however, in the literature in which pathology has been found under these same circumstances. Nevertheless, the big majority of pathologic reports have not shown sufficient evidence to warrant abortion in one hundred per cent of cases.

In going through the literature and in my own experience it seems that male infants are more often affected than female infants. This may be partly due to the fact that the female fetus evidently develops a little more rapidly than the male fetus. Statistics show that female prematures have a much better chance of survival than males.

In certain sections of the country it seems that a belief is held that virus infection, particularly rubella, in the first trimester of pregnancy always leads to malformation in the fetus. There are sufficient reports to prove that this is not the case. I doubt very seriously if over twenty-five per cent of such cases develop congenital malformations and a large number of these malformations are of a nature which are mild or amenable to treatment. Termination of pregnancy should only be considered after a very careful study of all facts involved and a serious discussion by several doctors and the parents. Unless the facts are sufficient definitely to indicate therapeutic abortion the mother should be protected, if possible, from even knowing that there is a possibility that her baby might be malformed.

SUGGESTED METHODS OF PREVENTION

It has been suggested that all girls, where possible, be intentionally exposed to German measles, in the hope that they will have this disease before they reach child bearing age. It has been suggested also that a possible method of inoculating children and in-

tentionally giving them rubella may be discovered and utilized in the future. It may be wise to give immune globulin, 10 cc. or more, to mothers in the very early stages of pregnancy and repeat this in three or four weeks. This might give them some protection against certain types of virus diseases but it has not been proven scientifically that gamma globulin will prevent German measles. In my experience it has failed to do so on two occasions. However, gamma globulin will certainly modify or prevent such diseases as red measles, virus hepatitis, and possibly poliomyelitis and other types of virus infections.

#### SUMMARY

A brief discussion of the role of virus infection as a cause of congenital malformations has been made. Three brief reports of personal cases have been presented in which rubella was the apparent cause of malformation in the fetus. It is the author's opinion that, except in *very unusual* cases, termination of pregnancy should not be done simply because the mother has rubella or other virus disease in the early trimester of pregnancy.

Physicians should make an effort to become as efficient as possible in the diagnosis of German measles and other viral diseases.

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## MULTIPLE TYPES OF CHEST PAIN IN A SINGLE INDIVIDUAL

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In dealing with the problem of chest pain, there is often a great deal of confusion because of the occurrence in a single patient of more than one type of pain. Since this symptom commonly occurs at a time when the physician is unable to witness an attack, the reproduction of the chest pain is an important procedure. Adequate measures to reproduce the pain can only be achieved when viewed in the light of a carefully taken history. The following case represents such a problem.

Mr. B. M., a 56-year-old grocer, complained of three different types of pain in the chest. The first type had been present for seven years and consisted of an aching pain in the second and third right inter-spaces just to the right of the sternum. This was accompanied by a burning pain in one or both wrists. The pain had first occurred seven years previously while he was walking rapidly, and, upon slowing the gait, the pain had subsided in a few minutes. Subsequently, it appeared on several other occasions, each time while walking rapidly; and it readily subsided on slowing the pace. Several weeks after the onset of the pain there occurred a severe attack of right chest pain with associated cramping pain in both arms. In addition, there was faintness, tremulousness, and sweating. Upon lying down, the pain disappeared in a few minutes. A physician was called, an examination made, and electrocardiograms taken. The patient was told that he had coronary angina and was placed on absolute bed rest for three months. During the first two weeks of this period, there occurred several more episodes of severe chest pain, not relieved by nitroglycerin. However, after a few weeks, the attacks of pain became less frequent and gradually disappeared. After getting out of bed he remained on limited activity and had no recurrence of pain. For the next three years he did no work but remained at home and there was no further difficulty. Then, he gradually extended his activity and returned to work. During the next three years he was on normal activity

and had only occasional very brief attacks of mild right chest pain, not related to exercise, emotion, eating or any other factor.

For one year he had noticed a second type of chest pain, located in the peri-apical region and being more of a sense of fullness than actual pain. This sensation commonly occurred 30 to 90 minutes after eating and was associated with the desire to belch. Relief could be obtained by either belching or taking Alka-Seltzer. This discomfort had occurred almost daily during the preceding year.

A third type of chest pain had occurred five days previously, appearing while he was sitting in church. Prior to the attack there was no discomfort except for a mild sensation of hunger. He had been seated for about twenty minutes and was under no emotional stress when there occurred a sudden tight, squeezing substernal pain which was of moderate severity. He became quite frightened and then noticed weakness, tremulousness, and sweating. After sitting for 10-15 minutes the pain gradually subsided and on leaving the church he felt quite well. This was the only attack of this nature that he had ever experienced.

There had never been any dyspnea, orthopnea, paroxysmal nocturnal dyspnea, or swelling of the feet or ankles.

Physical examination revealed a slightly obese, middle-aged man who did not appear ill. Temperature was 98.6° F., pulse was 86, and blood pressure was 152/90. Examination of the head and neck revealed no abnormalities. The thorax was symmetrical and there were no areas of chest wall tenderness. Percussion and auscultation of the lungs failed to reveal any abnormalities. The PMI was located in the 5th left interspace at the mid-clavicular line and there was a normal sinus rhythm. Auscultation revealed a third heart sound occurring in early systole and having a "clunking" quality. This sound could only be heard in the upright position. There was also a Grade II, high-pitched, squeaking murmur, late systolic in time, and heard at the mitral area. The murmur could only be heard with the pa-

tient supine and was loudest in the left lateral position. There were no other abnormal physical findings.

A resting electrocardiogram was entirely normal, as were two electrocardiograms made after varying degrees of exercise. Fluoroscopy revealed an emphysematous bleb in the left lower lung field but the heart was of normal size and shape. The Master's Exercise test failed to produce any chest pain and severe exercise (climbing 54 steps in 1 minute and 5 seconds) failed to cause any chest discomfort or electrocardiographic change. A Levine tube was passed and 1500 cc. of air placed in the stomach. This reproduced quite well the peri-apical fulness which the patient had experienced for one year. Voluntary hyperventilation reproduced the faintness, tremulousness, and sweating which he had experienced during the attack in church, but failed to cause any chest pain. However, the administration of 35 units of regular insulin caused an exact reproduction of the substernal pain which he had experienced. On reproduction of the pain, it was found that exercise did not cause accentuation of the severity and rest had no immediate effect.

It is believed that this man had actually had angina pectoris seven years previously. However, by restricting activity he had adequately controlled this situation and sufficient collateral circulation had developed so that, at the present time, there was no evidence of angina, even after severe effort. This type of recovery from angina pectoris has been seen many times and does not imply any change in the basic coronary atherosclerosis, only the relief of myocardial ischemia by the development of adequate collateral circulation.

The peri-apical fulness was undoubtedly the result of excessive amounts of air in the stomach. The one episode of substernal pain was evidently caused by hypoglycemia, and the associated symptoms were due to hyperventilation brought on by fright.

It was believed that the peculiar third heart sound was produced by the heart beating against air, either in the stomach or the emphysematous bleb. The systolic murmur was of the type occasionally heard in normal healthy individuals and was thought to be of no significance.

This man was told that, although there was no evidence of heart disease at the present time, he was a good candidate for possible future coronary involvement. He was

given a weight reduction diet that was of a high protein nature (to cause weight reduction while at the same time combating hypoglycemia). As regards activity, he was permitted any exercise which did not produce chest pain, shortness of breath, or undue fatigue. He was cautioned about air swallowing and given belladonna. The problem of hyperventilation was explained as well as the measures he should take to avoid it.

#### SUMMARY

A patient is reported who apparently had previously had angina pectoris clinically and by electrographic studies. Adequate control of exercise had allowed sufficient collateral circulation to develop so that the angina pectoris had subsided. The patient had subsequently developed two types of chest pain; one reproduced by placing air into the stomach, the other by causing a hypoglycemic reaction. The importance of reproduction of symptoms is emphasized.

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**The Beam in Our Eye**—No profession advocates a higher ethical and professional ideal, and no profession more generally maintains its high standards, than does the medical profession. No group so resents the necessity for entering the public forum to debate the dubious or dangerous proposals put forward by starry-eyed idealists or self-seeking politicians. The medical profession would like nothing better than to devote its energies to the attainment and maintenance of a healthy people, and the constant improvement of the skills of its practitioners. But the medical profession has a public duty, and an obligation, to make its voice heard in those matters concerning which it is best informed and most qualified to speak.

Even in the midst of the battle to protect the health of the people, and the integrity of the practice of medicine, there are problems within the profession which need attention, and which must not be neglected.

The medical profession knows, and the public suspects, that all is not well. The vast majority of the practitioners of medicine live and practice the high ideals of the profession. But there are exceptions. They are few, but their misdeeds stand out like sore thumbs. As one rotten apple will spoil the barrel, so the misdeeds of one black sheep in the community will counteract the skillful, conscientious, faithful, and unselfish practice of the balance of the profession in that area.

Even in the midst of a fight for our life as a free profession, even when much of our time and energy must be devoted to combating those who would destroy our freedom and our integrity, even when we must raise funds and expend effort to inform the public of the dangers of regimentation and the value of free choice; even in the midst of the great problems we are facing, we cannot, we must not neglect the problems within the profession itself.—*Hundley, Virginia M. Monthly, Oct. '52.*



## GRAVE ANGINA PECTORIS WITH A NORMAL ELECTROCARDIOGRAM

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In recent years there has been an increasing tendency to rely upon the electrocardiogram, taken either at rest or after exercise, as the final criterion in the diagnosis of disorders of the coronary circulation. This is unfortunate because the electrocardiogram, while often yielding information concerning the presence of a focal abnormality in the myocardium, does not tell the nature of the abnormality. Furthermore, a considerable number of patients with grave disorders of the coronary circulation display normal electrocardiographic tracings. This is illustrated in the following report.

R. L. C., a 44-year-old, white, sawmill worker, was seen three weeks after an episode of pain in the chest which lasted for twenty minutes and subsided without treatment. He had been hospitalized in his local community with a tentative diagnosis of acute coronary occlusion. Subsequent to this episode, and while at absolute rest in bed, he developed intermittent episodes of aching, substernal pain which on occasions radiated into the left arm. The pains were of moderate severity and seemed related to eating and constipation. There was no previous history of angina on effort.

The patient gave a four-year past history of gastrointestinal disturbances characterized by intermittent episodes of aching epigastric pain related to food ingestion and relieved by belching and flatus. Some foods, such as rough vegetables, were more prone to precipitate these attacks than others.

Physical examination revealed a slim, frightened, white male with no positive physical findings. All admission laboratory data, including EKG, were normal except for a leukocyte count of 11,300 with a normal differential formula.

The hospital course was marked by numerous episodes of chest pain while at rest. It was found that minimal exertion, such as walking slowly for two minutes, reproduced the pain; the same effort having no effect

when undertaken a few minutes after nitroglycerin. The admission EKG was normal although on that day the patient had 18 episodes of chest pain with quick relief in each instance by nitroglycerin. Therefore, he was given nitroglycerin gr. 1/150 every thirty minutes during the day and gr. 1/100 every hour during the night. During the fourth to the seventh day, the number of attacks of chest pain was reduced to six to seven with only an occasional episode lasting longer than four minutes. At this time, an EKG taken showed depression of S-T segment in leads  $V_2$ ,  $V_3$ ,  $V_4$  and inversion of the T wave in leads  $V_1$ — $V_5$ . These findings were not changed by nitroglycerin even though the pain was promptly relieved. On the ninth hospital day the patient had fifteen episodes of pain. On the tenth day at 11:00 A. M. the EKG was again normal. About 12:30 P. M. he began to have flurries of pain which totaled twenty-one episodes in four hours. During the early morning of the eleventh day he again had a flurry of pain lasting about three hours and finally controlled with morphine sulfate. He was pain-free the remainder of the eleventh day until 5:45 P. M. at which time he expired suddenly.

At autopsy the only significant finding was marked narrowing of the left anterior descending coronary artery with a small area of softening in the anterior septal region of the apex of the left ventricle. The macroscopic findings were verified by microscopic study.

Of the electrocardiographic tracings, the first and last—taken only 24 hours before death—were entirely normal. On the other hand, the second record taken at a time when the clinical picture was improving displayed well-marked depressions of the S-T segments. Had the second tracing not been taken, there would have been no electrocardiographic evidence of disease. This illustrates the fallacy of relying upon the electrocardiogram as the sole criterion of diagnosis.

This patient displayed the two cardinal clinical features of angina pectoris; i. e., the pain could be produced by physical effort

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This work was done during the tenure of a Life Insurance Medical Research Student Fellowship.

and could be prevented or quickly relieved by nitroglycerin. In our experience these clinical features are much more reliable than are the electrocardiograms in the diagnosis of angina pectoris.

The conditions which are likely to mimic this grave disorder are usually such benign disturbances as chest wall pain and minor digestive disorders. In differentiating them from such a potentially serious disorder as angina pectoris, which is always associated with the likelihood of sudden death, observations of the response to exercise and to nitroglycerin are of the greatest value.

#### SUMMARY

1. A case of grave angina pectoris with normal electrocardiographic tracings is presented.

2. It is pointed out that to rely on the EKG in the diagnosis of disorders of the coronary circulation is fallacious and fraught with danger of incorrect diagnosis.

3. The response to physical effort and to nitroglycerin should be observed closely in any patient suspected of having angina pectoris.

### A NEW MANAGEMENT OF HYPERTENSION

#### A CASE REPORT

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J. F. R., a 56-year old business man, had had a gradually ascending blood pressure for 11 years. He had initially responded well to hospitalization, sedation, and dietary measures, but on a second hospitalization some nine months ago had responded poorly to the same regimen. He was admitted to the hospital after several months of a home salt-free diet, running blood pressure readings up to 236/150. He was shortly thereafter started on the new hypotensive drugs Hexamethonium Chloride or C<sub>6</sub> and Hydrazinophthalazine or Apresoline, orally.

The dosage of each was increased slowly day by day, and at the end of 10 days it was found that C<sub>6</sub> 375 mgm. and Apresoline 75 mgm. at 5:00 A. M., 9:00 A. M., 1:00 P. M., 5:00 P. M. and 9:00 P. M. were maintaining normotensive readings most of the time. The dosage of Apresoline was then maintained at 75 mgm. each dose (5 times a day), and C<sub>6</sub> was varied according to the systolic reading at the time of the dose as:

150+ 500 mgm. C<sub>6</sub>

130-150 375 mgm.

110-130 250 mgm.

100-110 125 mgm.

If below 100 omit dose of C<sub>6</sub>

The blood pressure readings and dosages were determined by the nurses for two days while the patient was taught to take his own blood pressure, using his own stethoscope and sphygmomanometer. As soon as it was ascertained that he was taking reli-

able readings his medicine was placed at the bedside and, keeping a detailed record, he began to regulate his own dosage. This he did extremely well, and after several days of double checking his blood pressure readings against those of the nurses and doctors, and shifting his dosage scale to obtain the most ideal levels of blood pressure, he was discharged, maintaining his own blood pressure level at approximately 110-135/82-94.

This patient displayed one unusual point of interest that we had not seen previously. As mentioned before, he had been on a home salt-free diet for some months, and upon admission was placed on a hospital salt-free diet. On about the sixth day of therapy the patient was experiencing the usual malaise and lethargy attendant upon a return to normotension. At this time the weather had been extreme, temperatures above 100° and up to 106° F. being the rule. The malaise and lethargy continued and he began to develop a typical salt depletion syndrome, which responded dramatically—as did to a large degree the malaise—to NaCl given orally.

At a follow-up interview some two weeks after discharge, the patient's blood pressure and dosage diary were reviewed, and it was found that he was maintaining a blood pressure averaging 120/80 to 135/92 with little more than average variation either up or down. The dosage of drugs at this time was Apresoline 375 mgm. and an average of 1.875 Gm. C<sub>6</sub> per 24 hours.



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## SPIRITUAL AID

Enlisting the clergy in the fight against heart disease, the Massachusetts Heart Association has formed a Clergy-Physician Committee to give spiritual and psychological as well as physical aid to heart patients.

In a letter addressed to the clergy of the state, the Committee Chairman, Dr. Paul D. White, pointed out, "Diagnosis of a heart condition usually brings a mental and emotional shock to a patient. With knowledge to replace the vague and unreasoning dread about heart disease of the past, the physician, the clergy, the patient himself, and his family, can work together, not only to speed the day when heart disease may be largely prevented, but also to improve both psyche and soma in the face of heart disease in our time."

Dr. White said important facts the clergyman should stress include:

1. A diagnosis of heart disease is not a death sentence and as a rule heart patients do not die suddenly.

2. The heart is a very tough organ, composed chiefly of muscle. It has enormous powers of regeneration.

3. In most cases of heart disease, while a complete "cure" may not be achieved, a satisfactory routine of living can be reestablished.

4. Heart disease is an emotional as well as a physical problem. "Now abideth faith, hope and love." These three form the basis for successful living with heart disease.

5. "Taking care of one's self" does not mean retiring into invalidism. In only severe, advanced cases is it advisable to avoid effort of all kind and remain in bed. The doctor can best advise how much exercise is desirable.—*The American Heart*, Vol. II, No. 5, Summer 1952.

## MORE LAY LEADERS ASKED FOR HEART PROGRAM

We have come through a very exciting period of growth. Few, if any, health organizations can match the history of the American Heart Association during the past five years.

The public is now increasingly aware of the challenge of heart disease—the greatest public health challenge of all times. But in

many communities with which I am familiar, this has not yet been translated sufficiently into action.

In these communities, one of the most urgent needs is for the highest type of intelligent lay leadership—not to usurp the position of scientific or medical leadership which must be maintained by physicians, but to work hand in hand interpreting the Heart Association and its great work to the public, carrying the burden of fund-raising and helping especially to evaluate community service needs—all of this so that the physicians can more properly turn their attention to research and clinical aspects.

Each of us—laymen and physicians alike—must continue unremittingly our search for outstanding leaders who will grasp the torch. There is a great but practically untouched pool of potential leaders from families who have suffered from the ravages of cardiovascular diseases.

Thanks to the joint personal efforts of the laymen and physicians who have been devoted, I might say consecrated, to this great cause, the American Heart Association and its affiliates have been able to make available to the research workers of this country a combined total of over \$4,000,000 in the past four years, since the Association was reorganized as a voluntary health agency. Our research program has been planned with vision, firmly established and soundly executed.

Through the reorganization of our Scientific Council, we are giving evidence that the American Heart Association is sincere in its desire to represent the cardiovascular field in its entire spectrum, and plans for representation of all these facets at every level in its structure. With our foundations thus completed, improved communication will inevitably shorten the great gap too frequently encountered between an important discovery and its application to the saving of lives.

One of our continuing challenges lies in the need for education. In addition to our responsibilities to the medical profession, we must continue and expand our efforts to meet the growing demand from the public for the truth about our mutual problems.

The community service program of the American Heart Association should function both as the clearing house and as the fountainhead of ideas, the application of which

will remain in a large measure at the local levels. The need for key community service programs on the part of affiliates is recognized and constitutes a sound use of funds. Because of the magnitude of our problems, however, it is clear that for us to enter into the aspect of care of heart cases, except for limited pilot studies, would be beyond any resources available to us in the foreseeable future. Rather we must guide, teach, inspire, and aid other agencies, whether private or public, as they undertake various aspects of this gargantuan task.

In a thousand ways the National Office is being of constant help to the affiliates, especially those which are young or too small to develop all types of material for themselves. The coordination of interests and efforts of the affiliates with those of the National Office requires our best wisdom, most mature judgment, and consummate understanding of the views of others.—*Wright, The American Heart, Vol. II, No. 5, Summer 1952.*

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**The General Practitioner**—The day of the "horse and buggy doctor" is gone. The patient does not want him, and none of our modern trained medical men wish to be one. While it has been definitely proved by the North Carolina group that a general practitioner can take care of 85 per cent of all diseases with no more than the instruments carried in an ordinary handbag, it is essential that the general practitioner have a well equipped office and every modern facility at hand for the medical care of his patients. In this case it is probable that the average good general practitioner can treat from 90 to 95 per cent of his patients, depending upon his location, his association, and the type of his practice.

The patient should consult his personal physician with every disease or accident. If the case is within the limitations of the training and experience of his physician, then his family doctor will continue the care until its successful termination. But if it is of such severity or nature that a more extensively trained person is needed, then the family physician will be expected to call in a consultant. If other consultants are necessary, then the family doctor should be the one to call them in. Again, the general practitioner should stay on the case until its successful termination. Thus we will avoid some of the present difficulties commonly known as "patient-stealing."

The extent of the general practitioner's services will depend upon his type of practice. A man doing solo practice in an isolated community will necessarily do a more varied type of work than an individual who is practicing in a small group, or one who practices in a large group.—*Sanders, South. M. J., Oct. '52.*



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THE ASSOCIATION FORUM

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*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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**SECURITY****W. A. Dozier, Jr.****Director of Public Relations**

Two things within the recent past are the motivating forces for this article. We have just finished a presidential campaign, and many of the claims and counterclaims were aimed at people's desire for security. Some of these statements only implied security, but the basic desire was still the underlying appeal. And second, this writer has just gone through a period of trying to replace an office assistant. Let us look at these two situations separately.

The political campaign, which is now over, points us to the fact that Congress will convene again in January. When it does, the promises of the campaign must be considered; and efforts must be made to fulfill these campaign promises. It is impossible to consider each and every claim or promise that was made, but let us consider representative ones just briefly.

On the domestic scene, both political parties are dedicated to social security and to an expansion of this system. It is probably true that practically every American at least accepts this idea, even though many, including this writer, are anxious to see some changes made in the financial soundness of the system. Security is the primary aim behind this plan, and the American people are certain to hear more and more appeals made to their basic desire for freedom from want in their old age. The proponents of expansion are certain, also, to overlook or at least play down one question that each person should ask himself. That question is this, "How far am I willing to go to attain this so-called security, and what price must I pay?" The aim here is not to answer this question, for it would doubtlessly be answered differently by each individual. Yet, each person must question himself, find that point beyond which he is not willing to go, and then stand by and defend his decision.

On the international scene, both parties have dedicated themselves to peace. Peace within itself means a certain type of securi-

ty. Despite the claims of some, we have no peace at present. Call the Korean situation any fancy name you like; it all boils down, in the final analysis, to war. If we as a nation are dedicated to peace, and let us add an honorable one, the question arises as to the best method to follow in attaining this condition of international security called peace. How far can we go on a specific line of action and still get the desired results without completely wrecking our whole mode of living? Again these questions must be answered in the mind of each individual.

Cursory though the above remarks are, they serve the purpose of this article. Let us now turn to the second incident which motivated this writing. Recently this writer's secretary moved to another city. While trying to replace her, he had one applicant say that she would like to take the job until such time as she could get a civil service one. Without asking the direct question, an effort was made to ascertain why she was so interested in government service. It became fairly evident that the all important factor was security. She felt that, in the vernacular of the day, once she was on a permanent appointment in civil service, she had it made. In the conversation she stated that she did not expect to like the work particularly, that she felt she would often be wasting her time, that she did not expect to be able to make a contribution to mankind, but that she was willing to bear these detriments to the situation for the security she felt she would attain.

The applicant in the above situation was a young person, one who should have been facing life with a hope and an expectancy of liking her work, of using her time and efforts beneficially, and of making a contribution. Yet the security idea had completely dominated the picture. The question which grows out of this interview is a rather serious one. Have we as a people so over-emphasized security as to take from future generations that spark that has at least been extremely important in placing our nation where it is today?

The above questions and many allied ones need to be asked by each American before a decision is made on this matter of security. You as a voter and as a member of society should give serious consideration to the se-

curity concept, and once you have made your decisions on all the questions that inevitably will arise, you should become vocal on the matter. Security as you see and desire it may be in the balance.

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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

### WILLIAM HARVEY AND THE CIRCULATION OF THE BLOOD

Contributed by

John M. Gibson, Director

Division of Public Health Education

"Only God knows the movement of the heart and the blood."

That statement was made about 500 years ago by one of the leading medical men of his time.

It was quite true at the time it was made. But, fortunately, it is true no longer. Indeed it has been untrue for 300 years and longer. Nowadays and for a long time doctors know "the movement of the heart and the blood." It is as well known in fact as the movement of the stars in the heavens, which is no mystery to astronomers. Thanks to that knowledge, your doctor is able to do much to protect you and your family against that mass killer, heart disease. He is also able to give you a great deal of protection against the diseases of the arteries, which also rank high as killers. Unfortunately, he cannot give you complete protection against those illnesses. Would that he could! But, to repeat, you are infinitely less likely to die from heart disease and diseases of the arteries than you would be without that knowledge. And, since the heart and blood vessels also have much to do with the prevalence of other forms of illness, your health generally is undoubtedly much better than it would be if your doctor knew as little about the "movement of the heart and the blood" as his professional ancestors of several centuries ago.

You hardly need to be told that the heart and circulatory system represent a vast and complicated piece of human machinery. The

heart itself, for example, is one of the most powerful pumps ever placed into operation. The network of blood vessels which supplies every part of your body with the nourishment it needs makes any man-made system of pipes and conduits look like child's play by comparison. The total mileage your blood travels between the time it leaves one side of your heart and returns to the other side after completing its complicated circuit would amaze you. We are indeed fearfully and wonderfully made.

For many centuries medical scientists had concepts of the function of the heart and the methods by which oxygen and nutrients were transmitted to the body. But they were wrong. Like so many ideas of those ages—having to do with medicine, as well as other aspects of life—they failed to "gibe" with reality. And there is no doubt that many, many lives were lost because curative and even diagnostic procedures were based upon them.

We are indebted to an Englishman for the correction of those dangerous errors in medical thinking. Your doctor studied about him in medical school. His work and life are fairly familiar to most workers in the broad field of public health. Numerous other people, outside the field of health and healing, know about him from their general studies and reading. But he is not as well known among the general public as he should be, as he deserves to be. His name is William Harvey.

This beneficent contributor to the health of his own time and ours was born at Folkestone, England. His birth year was 1578. While an undergraduate at Cambridge University he came under the influence of a professor named John Caius, who had studied under the famous University of Padua (Italy) medical teacher, Vesalius. The Caius influence was so great that William Harvey was eager to study medicine by the time



he completed his Cambridge course, receiving the regulation B. A. degree. And, naturally, he was eager to prepare for his life work at the same institution where his beloved master had been taught, the University of Padua.

At that famous cultural center, one of the few institutions of higher learning in existence at the time, and one of the very few which have survived to our time, he became a student of another famous medical teacher named Fabricius, who had made some extensive studies of the human anatomy. They had led to some important conclusions, among them the theory that the veins of the body contain devices functioning like valves, which prevent the blood from flowing backward.

There is good reason to believe, without being absolutely sure of it, that the English medical student from Folkestone had a part in the studies that led up to this conclusion. And it is equally likely that these studies and their findings made a deep and lasting impression upon him, possibly starting the trend of his thinking which led eventually to the discovery that has made him a world figure in the field of science—the circulation of the blood.

But William Harvey did not show much promise of distinction at that time. His career as a medical student at the University of Padua was not particularly different from those of any number of other medical students of that period who never rose above mediocrity. There was little to cause even the most friendly Harvey admirer to predict anything outstanding from him.

He received his medical degree in 1602. He was then twenty-four years old.

His medical schooling at an end, Harvey returned to his native country and opened his office in its biggest city, London. As time went on, he developed a good practice and won the confidence of his large body of patients. But many second-rate and even third-rate medical practitioners had done the same. There was still no reason to expect any revolutionary contribution to the science of medicine from this steady plodder.

Nevertheless, Harvey's creative powers were stirring. He found himself living in an age when men of science and others were no longer satisfied with the centuries-old answers to vital questions. In that age of

scientific awakenings there was a strong tendency to challenge propositions, concepts and theories. Those solidly wedded to the status quo were constantly being disturbed by insistent demands as to the "why" of certain long-established and little-challenged beliefs. The century in which Harvey began his work as a London practitioner was the same century that produced Galileo and the law of the pendulum. The Seventeenth Century also produced Sir Isaac Newton and the theory of gravitation. It was the century of Johannes Kepler and his upsetting theories regarding the great world of astronomy. New names were to appear in the field of literature during that era that was to become known as the age of prose and reasons—names like Shakespeare, Moliere and Milton. Philosophy was to endure some strong challenges to many of its favorite concepts during that century from daring thinkers like Bacon, Locke and Descartes. It was stimulating for an eager young mind to be living in such an age, coming into contact, however indirectly, with such minds.

Dr. Lewis J. Moorman, of the University of Oklahoma School of Medicine, has given us an excellent picture of this phase of the growth and maturity of the Harvey mind in preparation for a world-stirring discovery. Writing in *The Journal of the Student American Medical Association*, he declared:

"Having imbibed the spirit of Vesalius, and having been stimulated by the curiosity of Fabricius, no doubt he was intrigued by the warm, living, mobile structures of the body and bent upon the discovery of the genuine source of nutriment and function. Thus he conceived the circulation of the blood as his first and most important objective. Through long, continued observations, employing hundreds of animals, 80 different species—he brought the hypothetic concept to full fruition with objective verification of truth. Though not yet published, through his efforts experimental medical science was born, and the distinct science of physiology appeared full-fledged."

Dr. Moorman continued:

"Though the blood of human beings had laved the beachheads of thoughts and nourished human brain cells throughout the ages, there had been no adequate comprehension of these functions until Harvey demonstrated the cycle of this vitalizing body fluid. The teachings of Aristotle and Galen with reference to the circulation had prevailed and Fracastoro, in spite of his response to the Renaissance, had declared that 'only God knows the movement of the heart and the blood.'"

Having set his sights upon a solution of the problem of the distribution of nutrient

and oxygen to the most distant part of the body, Harvey toiled away at getting an answer to his great question. How were those widely scattered organs, muscles and skin areas kept alive and useful? What agency or system made it possible for a bone to resist strain for years without breaking, in spite of being unable to make direct contact with the channels through which food itself travels through the body? How could unborn babies survive for nine months inside their mothers' bodies, unless they obtained nourishment and oxygen from some source inside the body? What, in short, was the explanation for many of the great mysteries of human existence? For more than ten years William Harvey struggled with questions like these. And at last he was sure he had the fundamental answer that fitted all of them. That was about 1615, probably a little earlier.

In that year, he was named a professor at London's famous College of Physicians. Let us refer again to Dr. Moorman:

"Manuscript notes of his first lecture indicate that he had solved the problem of the circulation (of the blood) which had occupied his mind night and day for more than a decade. Wisely conservative, it was years later—after many corroborative demonstrations and with a full realization of the inevitable controversy—that he boldly reported the results of his investigations. He realized the importance of verification of his findings and the conviction that his work would successfully withstand the anticipated avalanche of criticism."

It was indeed "years later"—many years that is, after he had worked out and tested his theory of the circulation of the blood—that he made that epochal public announcement and steeled himself for the expected storm. In 1628, 13 years after he began his professorship at the College of Physicians in London, he authored a small volume published under a formidable Latin title. And the expected storm broke in full fury. Dr. Moorman wrote:

"As anticipated, this avowed disregard for established teachings brought a flood of protests. He steadfastly faced the successive waves of the storm and stood ready to prove his conception of the circulation, to show that the pulse was not directly under the influence of the respiration, that the blood did not pass from the right heart to the left through pores in the septum (partition), that the arteries did not contain air and ethereal spirit, but pure blood ejected from the heart under the impact of muscular counteraction, that it did not merely ebb-and-flow but coursed in consecutive waves from the heart to the end of the arteries and back to the heart through the veins. . . ."

In a battle between well established but erroneous theories and the truth, however new and unpopular, the latter usually wins. Even the most deeply ingrained misconception eventually melts under the strong sunshine of demonstrated truth. And so it was in this case. The opponents of the Harvey theory fought stubbornly for a good long time. But in the end they had to admit defeat. In time, the circulation of the blood, virtually as he explained it, became as firmly established in medical theory and practice as vaccination and surgery.

This great Englishman will forever be associated with that revolutionary discovery. But he did not limit his activities to that one field. For one thing, he became interested in embryology, the beginnings of life. As Dr. Moorman tells us, "he wanted to get at the origin and understand the evolution of anatomy and physiology." He published a treatise on the results of his research in that field. He was extremely modest about it, however. In fact, he was so sure he had not made any notable contributions to the science of embryology that he was reluctant to give those fruits to the world.

Harvey's last years were not happy ones. Having been physician to James I and his son Charles I, he found himself on the wrong side in the civil war of that period. His enemies invaded his home and took away or destroyed many of his most prized possessions, including his carefully prepared, carefully preserved, papers. Death overtook him in 1657 after his retirement to Lambeth, where he had been living in disappointment but without rancor. He was then 79.

We have this simple tribute from Dr. Moorman:

"He was a genuine gentleman, honored in life, generous in death and timeless in the annals of his profession."

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Most people resist education and only few seek it. Educators tell us there are three periods in life when the individual is very ready to learn: (1) the little child who is eager to learn everything, (2) the young mother who wants to learn how to care for her child, and (3) the person who is ill and anxious to learn how to regain his health. The patient is a member of a community; he is anxious to learn how to get well and stay well, but he cannot learn without a teacher. The logical persons to reinforce the formal instruction which the patient receives, whether that instruction be given by the doctor or a nurse, are the members of the nursing staff in their daily contacts with the patient.—*Aileen Flett, R. N., Annual Meeting, Canadian Tuberculosis Association, May 1951.*



## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

## SPECIMENS EXAMINED

August 1952

|   |               |
|---|---------------|
| Examinations for diphtheria bacilli and Vincent's .....         | 349           |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 1,300         |
| Brucella cultures .....   | 22            |
| Typhoid cultures (blood, feces and urine) .....                 | 897           |
| Examinations for malaria .....                                  | 269           |
| Examinations for intestinal parasites .....                     | 3,715         |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 24,688        |
| Darkfield examinations .....                                    | 4             |
| Examinations for gonococci .....                                | 1,753         |
| Examinations for tubercle bacilli .....                         | 2,716         |
| Examinations for meningococci .....                             | 2             |
| Examinations for Negri bodies (microscopic) .....               | 90            |
| Water examinations .....  | 1,813         |
| Milk and dairy products examinations .....                      | 4,842         |
| Miscellaneous .....   | 988           |
| <b>Total</b> .....  | <b>43,448</b> |

## BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

## CURRENT MORBIDITY STATISTICS

1952

|                               | July | Aug. | E. E.*<br>Aug. |
|-------------------------------|------|------|----------------|
| Typhoid and paratyphoid ..... | 12   | 20   | 13             |
| Undulant fever .....          | 1    | 6    | 1              |
| Meningitis .....              | 14   | 11   | 7              |
| Scarlet fever .....           | 3    | 16   | 21             |
| Whooping cough .....          | 35   | 9    | 80             |
| Diphtheria .....              | 9    | 17   | 31             |
| Tetanus .....                 | 4    | 4    | 4              |
| Tuberculosis .....            | 226  | 190  | 255            |
| Tularemia .....               | 0    | 0    | 0              |
| Amebic dysentery .....        | 0    | 0    | 3              |
| Malaria .....                 | 7    | 20   | 42             |
| Influenza .....               | 35   | 13   | 24             |
| Smallpox .....                | 0    | 0    | 0              |
| Measles .....                 | 217  | 55   | 29             |
| Poliomyelitis .....           | 62   | 62   | 35             |
| Encephalitis .....            | 0    | 2    | 1              |
| Chickenpox .....              | 32   | 5    | 4              |
| Typhus fever .....            | 0    | 1    | 32             |
| Mumps .....                   | 36   | 27   | 31             |
| Cancer .....                  | 331  | 393  | 312            |
| Pellagra .....                | 3    | 2    | 2              |
| Pneumonia .....               | 76   | 139  | 117            |
| Syphilis .....                | 169  | 260  | 1194           |
| Chancroid .....               | 3    | 6    | 13             |
| Gonorrhea .....               | 278  | 473  | 616            |
| Rabies—Human cases .....      | 0    | 0    | 0              |
| Positive animal heads .....   | 46   | 40   | 0              |

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

Vast changes have taken place in our understanding of tuberculosis, the methods of its control and treatment, and the possibility of its ultimate eradication. As far back as 1937 Dr. Wade Frost demonstrated epidemiologically that this possibility could be made a reality even with the public health control methods then available, provided we intensified our efforts sufficiently. The goal is still distant but new methods and discoveries give us courage to pursue it still more energetically.—*Emerson, Connecticut M. J., May 1952.*

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

## PROVISIONAL BIRTH AND DEATH STATISTICS FOR JUNE 1952, AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                        | Number<br>Registered<br>During<br>June 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|--|---|-------|---------|--------------------------|-------|-------|
|  | Total                                       | White | Colored | 1952                     | 1951  | 1950  |
| Total live births .....  | 5885  |       |         | 22.9                     | 25.5  | 23.6  |
| Total stillbirths .....  | 178   |       |         | 29.4                     | 26.4  | 29.3  |
| Deaths, stillbirths excluded .....                                       | 2325  | 1398  | 927     | 9.0                      | 8.4   | 8.7   |
| Infant deaths:   |   |       |         |                          |       |       |
| under one year .....   | 297   | 137   | 160     | 50.5                     | 37.4  | 43.6  |
| under one month .....  | 197   | 99    | 98      | 33.5                     | 26.6  | 29.5  |
| <b>Causes of Death</b>   |   |       |         |                          |       |       |
| Tuberculosis, 001-019 .....  | 48  | 20    | 28      | 18.7                     | 27.0  | 34.0  |
| Syphilis, 020-029 .....  | 6   | 4     | 2       | 2.3                      | 3.9   | 5.2   |
| Typhoid and paratyphoid, 040, 041 .....                                  |   |       |         |                          | 0.8   | 0.8   |
| Dysentery, 045-048 .....   | 7   | 1     | 6       | 2.7                      | 2.0   | 1.2   |
| Whooping cough, 056 .....  | 2   |       | 2       | 0.8                      | 1.2   | 2.4   |
| Meningococcal infections, 057 .....                                      | 1   |       | 1       | 0.4                      |       | 1.2   |
| Poliomyelitis, 080, 081 .....  | 1   |       | 1       | 0.4                      | 1.6   | 0.4   |
| Encephalitis, 082, 083 .....   | 2   |       | 2       | 0.8                      | 0.4   |       |
| Measles, 085 .....   | 8   | 4     | 4       | 3.1                      | 0.8   |       |
| Malaria, 110-117 .....   |   |       |         |                          |       | 0.8   |
| Malignant neoplasms, 140-205 .....                                       | 253   | 194   | 59      | 98.4                     | 81.2  | 85.5  |
| Diabetes mellitus, 260 .....   | 33  | 23    | 10      | 12.8                     | 13.3  | 7.6   |
| Pellagra, 281 .....  | 1   |       | 1       | 0.4                      | 0.8   | 0.4   |
| Vascular lesions of central nervous system, 330-334 .....                | 327   | 183   | 144     | 127.2                    | 93.7  | 101.4 |
| Other diseases of nervous system, 300-318, 340-398 .....                 | 38  | 22    | 16      | 14.8                     | 9.0   | 14.8  |
| Rheumatic fever, 400-402 .....   | 7   | 6     | 1       | 2.7                      | 2.0   | 2.0   |
| Diseases of the heart, 410-443 .....                                     | 641   | 413   | 228     | 249.3                    | 249.0 | 258.8 |
| Diseases of the arteries, 450-456 .....                                  | 35  | 25    | 10      | 13.6                     | 12.5  | 8.8   |
| Other diseases of the circulatory system, 444-447, 460-468 .....         | 33  | 20    | 13      | 12.8                     | 7.4   | 9.6   |
| Influenza, 480-483 .....   | 14  | 10    | 4       | 5.4                      | 4.7   | 2.8   |
| Pneumonia, 490-493 .....   | 60  | 30    | 30      | 5.1                      | 21.2  | 26.0  |
| Bronchitis, 500-502 .....  | 1   | 1     |         | 0.4                      | 0.8   | 1.6   |
| Appendicitis, 550-553 .....  | 4   |       | 4       | 1.6                      | 2.0   | 1.2   |
| Intestinal obstruction and hernia, 560, 561, 570 .....                   | 16  | 5     | 11      | 6.2                      | 6.3   | 6.4   |
| Gastro-enteritis and colitis (under 2) 571.0, 764 .....                  | 34  | 14    | 20      | 13.2                     | 3.5   | 8.4   |
| Cirrhosis of liver, 581 .....  | 13  | 11    | 2       | 5.1                      | 4.7   | 8.0   |
| Diseases of pregnancy and childbirth, 640-689 .....                      | 11  | 4     | 7       | 18.2                     | 21.0  | 31.3  |
| Sepsis of pregnancy and childbirth, 640, 641, 645.1, 681, 682, 684 ..... |   |       |         |                          | 3.0   | 6.6   |
| Congenital malformations, 750-759 .....                                  | 30  | 19    | 11      | 5.1                      | 5.1   | 4.6   |
| Accidental deaths, total, 800-962 .....                                  | 202   | 146   | 56      | 78.6                     | 72.1  | 62.3  |
| Motor vehicle accidents, 810-835, 960 .....                              | 99  | 75    | 24      | 38.5                     | 24.3  | 25.6  |
| All other defined causes .....   | 380   | 199   | 181     | 147.8                    | 155.7 | 155.8 |
| Ill-defined and unknown causes, 780-793, 795 .....                       | 117   | 52    | 65      | 45.5                     | 44.3  | 43.1  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon June report of the years specified.

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### CANCER OF LUNG NOW MOST COMMON FORM

Cancer of the lung has steadily increased in incidence until it is now the most common form of cancer, according to Drs. Louis H. Clerf and Peter A. Herbut, Philadelphia. The doctors are associated with the departments of laryngology and broncho-esophagology and pathology, Jefferson Medical College and Hospital.

During 1948, cancer of the lung caused more than 16,000 deaths in the United States. The treatment of such cancer, most prevalent in men between the ages of 40 and 70 years, depends upon early diagnosis and immediate institution of therapy, the doctors wrote in the October 25 Journal of the American Medical Association.

Lung cancer presents no characteristic clinical picture, the doctors pointed out. In its early stages, the disease may show no symptoms, and its onset may be so insidious that it may not be suspected by either the patient or his physician until the case is hopeless.

The most common first symptom of cancer of the lung is a cough, they stated. This cough is, in general, of an irritative character, may be troublesome at night, and is often nonproductive of sputum.

Blood in the sputum should never be disregarded, as it may be a sign of lung cancer, the doctors said. Other factors indicative of carcinoma of the lung include pain or discomfort in the chest region, shortness of breath, wheezing respiration, and abnormal chest shadows in x-rays. Although hoarseness, weakness and weight loss are not of themselves of any significance in detecting lung cancer, their presence should merit further investigation when they are observed in conjunction with the symptoms discussed above.

X-ray studies of the chest are unquestionably the most important single diagnostic aid in determining the presence of lung cancer, the doctors stated. If abnormal findings are present, a bronchoscopic examination should be given. This examination should encompass visualization of the

bronchial tree, microscopic examination of the tumor, and collection of secretion for microscopic study.

Such secretions include sputum, spontaneously discharged bronchial secretions, and bronchial washings. The latter form of secretion is preferred by the doctors, who stated they were able to make positive diagnoses in 476 of 540 patients (88.3 per cent) as a result of such procedure.

The article by Drs. Clerf and Herbut is the third in a series of six such reports on cancer which will appear in The Journal. Written by cancer specialists, the series is sponsored by the office of the A. M. A.'s Committee on Research of the Council on Pharmacy and Chemistry. Previous articles discussed present day methods for the earliest possible diagnosis of cancer of the cervix and stomach, and subsequent ones will discuss cancer of the breast and the care of the hopelessly ill cancer patient.

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### LEAD POISONING IN CHILDREN RELATIVELY COMMON OCCURRENCE

The first place a child puts something is in his mouth. As a result of this habit, lead poisoning in children is relatively common.

Because of the high mortality and the severity of permanent damage in nonfatal cases, poisoning by this metal should be kept in mind according to Drs. Rudolph C. Giannattasio, Andrew Bedo and Michael J. Pirozzi, Brooklyn. The doctors are associated with the pediatric department, Kings County Hospital.

The doctors reported on 14 cases of lead poisoning in children. Two of the cases terminated in death, one child became blind, one suffered paralysis of the left extremities and a residual left facial palsy, one had tremors of both upper extremities, and two had a drooping of the left upper eyelid. In 10 of the 14 cases, definite evidence of brain degeneration was observed.

"The ingestion of paint on window sills and recently repainted walls was the commonest source of lead intoxication in our group," the doctors stated in the current American Journal of Diseases of Children,



published by the American Medical Association.

"Although exterior house paint contains lead in amounts up to 70 per cent, interior wall paint is usually free of lead. However, the possibility that home owners themselves are repainting their walls with paints containing lead must be strongly considered."

The most common symptoms of lead poisoning were vomiting, abdominal pain, convulsions and constipation. Many of the patients also suffered from a depraved appetite, inflammation of the upper respiratory tract, lethargy, irritability, a dragging of the foot, tremors of the extremities, and pallor.

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#### HUNT GAME INSTEAD OF DEATH, A. M. A. PLEADS

Don't hunt death.

Now that the hunting season is "within sights," the American Medical Association urged hunters to make sure that the nation's woods and fields do not become scenes of death and serious injury as a result of a sport that can and should be a healthy recreation.

Hunting accidents are needless, the association pointed out. By the following of a few, simple, common-sense rules, a hunter may save the life of another sportsman—and the life may be that of a relative or dearest friend.

Hunters are reminded that everything that moves is not fair game. Know where your companions are and shoot in the other direction; for extra precaution, break open your gun when another sportsman approaches. Keep your finger off the trigger until you are ready to shoot and never, in fun or for any other reason, let a gun point anywhere but at the ground except when shooting. Shooting from a car is unsportsmanlike, unlawful in most states, and dangerous for people near the road.

Other rules given by the A. M. A. to assure happy hunting were:

1. Do not look down a gun barrel.
2. Do not go hunting in cowboy boots with high heels.
3. Never let the muzzle of the gun scoop up snow or mud; the gun might explode the next time it is fired.

4. Do not play with dogs while holding loaded guns; the dogs may leap up and catch the trigger of the gun with their claws.

5. Never climb a tree with a loaded gun.

6. Do not drink when you hunt.

7. Never lean on the muzzle of the gun.

8. Never try acrobatics while clutching a loaded gun.

9. Pass the gun under a wire fence before climbing over it. To cross a barrier, place the gun to one side, muzzle facing forward; cross over at a distance far enough away from the gun so it will not be jarred.

10. Do not put loaded weapons in a car. Break open the guns and remove the ammunition so that jolts and bumps of riding cannot set them off.

Do not make hunting a hazard for yourself or another sportsman, the A. M. A. stressed. Make sure you hunt game—not death.

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#### WARN AGAINST PROLONGED USE OF ESTROGEN CREAMS

Continuous absorption by older women of small amounts of estrogens over a long period of time, such as could be obtained through the use of estrogen creams, may affect the female organs, in the opinions of Drs. Minnie B. Goldberg and Franklin I. Harris, San Francisco. The doctors are associated with the divisions of medicine and surgery, Mount Zion Hospital.

"If estrogen creams continue to be sold over the counter without prescriptions, it should be mandatory that the label bear a warning advising intermittent and not continuous use, as well as a statement recommending a limitation of quantity to be used," the doctors wrote in the October 25 Journal of the American Medical Association.

**WANTED: PHYSICIAN FOR ALABAMA STATE MENTAL INSTITUTION. MUST BE LICENSED. SALARY \$6,600.00 to \$7,800.00. Write Dr. J. S. Tarwater, Superintendent, Alabama State Hospitals, Tuscaloosa.**

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## ASTEROL TREATMENT OF SUPERFICIAL FUNGUS INFECTIONS

HOWEL W. SLAUGHTER, M. D.

Mobile, Alabama

The antifungal activity of Asterol Dihydrochloride has been described by a number of investigators who have studied the drug in the laboratory and in the dermatologic clinic.<sup>1, 2, 3, 4, 5, 6, 7, 8</sup>

Chemically, Asterol Dihydrochloride is 2-dimethylamino - 6 - (beta - diethylamino ethoxy)-benzothiazole dihydrochloride. It occurs as white odorless crystals which are readily soluble in water and alcohol.

The Asterol Dihydrochloride used in this study was supplied through the courtesy of Dr. Leo A. Pirk of Hoffman-La Roche, Inc.

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4. Stritzler, C.; Fishman, I. M., and Laurens, S.: Treatment of Tinea Capitis with a New Antifungal Compound, Arch. Dermat. & Syph. 63: 606-610, 1951.

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6. Appel, B.; Tye, M. J.; Halpern, W., and Paci, D.: Microsporiasis of the Scalp, New England J. Med. 245: 1003-1006, 1951.

7. Ravits, H. G.: Treatment of Superficial Dermatomycoses with Asterol Dihydrochloride, J. A. M. A. 148: 1005-1007, 1952.

8. Morginson, W. J.: Tinea Capitis (*M. audouini*) Treated with Asterol Dihydrochloride, Read before the Section of Dermatology and Syphilology, American Medical Association, Chicago, Illinois, June 11, 1952.

In the treatment of tinea cruris with Asterol Dihydrochloride, Stritzler et al.<sup>2</sup> observed that "some of the infections caused by *C. albicans* responded almost dramatically." They further observed that "patients with paronychia due to *C. albicans* make more rapid progress with Asterol Dihydrochloride than with any other medication previously used, including permanganate soaks, Castellani's paint, undecylenic acid preparations, and ammoniacal silver nitrate."

Reiss<sup>3</sup> presented evidence that "one Asterol Dihydrochloride spraying of hairs infected with *Microsporon audouini* suppresses sporulation."

According to Edelson et al.,<sup>5</sup> "Asterol Dihydrochloride was found effective in a high percentage of cases with tinea capitis due to *M. audouini*. The drug proved reassuringly safe in that it elicited a minimum of untoward reactions. Since Asterol Dihydrochloride is distinguished by ease of application, its use is attended by very gratifying results, also, in the treatment of patients whose parents contribute little cooperation."

Ravits<sup>7</sup> reported that "gratifying results were obtained in tinea pedis, tinea versicolor, tinea capitis, tinea corporis, and paronychia." In tinea pedis due to *T. gypsum*, he observed that "the most dramatic results were obtained in patients with chronic cases of five to seven years' standing. They had been treated previously with many different fungicides, including the fatty acid preparations."<sup>7</sup>

Because of good results obtained by these and other investigators, we became interested in testing the effectiveness of Asterol in



our private practice. This paper summarizes the results obtained with Asterol in fifty cases of various types of superficial fungus infections encountered in routine dermatologic practice.

#### MATERIALS AND METHODS

Asterol Tincture, 5%, in 70% isopropyl alcohol, and Asterol Ointment, 5%, in a Carbowax base, were used in this study. Often both preparations were prescribed together; the tincture for daytime application, the ointment for use at night. Sometimes the ointment was prescribed alone, sometimes the tincture alone, depending upon the location, type and extent of infection.

During the acute or pyodermic phases of fungus infection, conservative treatment, such as permanganate soaks or wet dressing of boric acid or Burow's solution, was used first; subsequently Asterol Tincture and Asterol Ointment were prescribed.

Diagnosis was based on clinical impression and patient's history, confirmed by positive culture and Wood's light examination. The criterion for clinical cure in patients with tinea capitis was several successive negative Wood's light examinations; in glabrous skin infections the criterion for cure was negative clinical findings. The fifty cases summarized in this paper were selected from a larger group of patients treated by us. Only those with positive cultures are reported here.

#### RESULTS

The results of treatment with Asterol are summarized in Table 1.

TABLE 1  
SUMMARY OF RESULTS

| Type of Tinea      | No. of<br>Cases Cured Improved Failed |    |   |   |
|--------------------|---------------------------------------|----|---|---|
| Tinea versicolor   | 12                                    | 12 | 0 | 0 |
| Tinea capitis      |                                       |    |   |   |
| <i>M. lanosum</i>  | 12                                    | 11 | 0 | 1 |
| Tinea cruris       |                                       |    |   |   |
| <i>C. albicans</i> | 2                                     | 2  | 0 | 0 |
| <i>T. gypseum</i>  | 1                                     | 1  | 0 | 0 |
| <i>T. rubrum</i>   | 2                                     | 2  | 0 | 0 |
| Tinea corporis     |                                       |    |   |   |
| <i>T. gypseum</i>  | 5                                     | 4  | 0 | 1 |
| <i>T. rubrum</i>   | 7                                     | 4  | 1 | 2 |
| <i>M. lanosum</i>  | 1                                     | 1  | 0 | 0 |
| Tinea pedis        |                                       |    |   |   |
| <i>C. albicans</i> | 2                                     | 2  | 0 | 0 |
| <i>T. gypseum</i>  | 3                                     | 3  | 0 | 0 |
| <i>T. rubrum</i>   | 2                                     | 1  | 1 | 0 |
| Onychomycosis      |                                       |    |   |   |
| <i>T. gypseum</i>  | 1                                     | 1  | 0 | 0 |
|                    | 50                                    | 44 | 2 | 4 |

*Tinea Versicolor.* Probably the most dramatic results were in tinea versicolor. All twelve cases treated with Asterol resulted in clinical cures. The duration of treatment varied from one to six weeks. In general, it can be said that two weeks was the average course.

*Tinea Capitis.* Excellent results were obtained in tinea capitis of the *M. lanosum* type. Of the twelve cases treated, only one was a failure. In this case the medication had to be discontinued because of local irritation. In the eleven cases which responded favorably, a clinical cure was obtained in from six weeks to four months, the average duration of treatment being three months.

*Tinea Cruris.* Five cases of tinea cruris were treated. All five were cured in from two to four weeks.

*Tinea Corporis.* In general, tinea corporis was more resistant. Thirteen cases were treated. Clinical cures were obtained in nine. There were three frank failures, two of which were *T. rubrum* infections and one a *T. gypseum* infection. The one classified as improved was a *T. rubrum* infection. The nine clinical cures were obtained in an average of three weeks.

*Tinea Pedis.* Seven cases of tinea pedis were treated. Six were cured in from two to four weeks. One *T. rubrum* infection was resistant to cure but showed definite improvement.

*Onychomycosis.* One case of onychomycosis, cultured as *T. gypseum*, was considered cured after six months' treatment with Asterol Tincture.

#### DISCUSSION

Table 2 shows a summary of organisms encountered in this series of fifty patients.

TABLE 2  
SUMMARY OF ORGANISMS

|                    | Cases Cured Improved Failed |    |   |   |
|--------------------|-----------------------------|----|---|---|
| <i>M. furfur</i>   | 12                          | 12 | 0 | 0 |
| <i>C. albicans</i> | 4                           | 4  | 0 | 0 |
| <i>T. gypseum</i>  | 10                          | 9  | 0 | 1 |
| <i>T. rubrum</i>   | 11                          | 7  | 2 | 2 |
| <i>M. lanosum</i>  | 13                          | 12 | 0 | 1 |
|                    | 50                          | 44 | 2 | 4 |

It will be noticed that all *M. furfur* and *C. albicans* infections were cured without exception. Only one of the ten *T. gypseum* infections failed to respond. The most difficult cases to cure or improve, as could be ex-

pected, were chronic *T. rubrum* infections, but even in these the results were gratifying. The one failure among thirteen *M. lanosum* infections resulted when medication had to be withdrawn because of local irritation.

Treatment with Asterol in this series shows a higher cure rate (88% of the patients were discharged as cured) than we have ever observed with other antifungal drugs. This cure rate seems to be somewhat higher than has been reported with Asterol in studies conducted in the clinic. One reason for this may be that patients who come to us in private practice are usually willing and able to cooperate fully in regular office and home treatment. They invest both time and money to clear up as quickly as possible the distressing, unsightly conditions which handicap them physically and socially. On the other hand, clinic patients seldom offer complete cooperation. This difference is illustrated by a paper presented before the Section of Dermatology and Syphilology, American Medical Association, Chicago, Illinois, June 11, 1952, by Morginson.<sup>8</sup> In the treatment of tinea capitis he observed that 83% of his private patients were cured compared to 53% of his clinic patients. Similarly, Ravits<sup>7</sup> observed in a study of one hundred clinic patients: "All patients were treated on an outpatient basis and were instructed in proper application of the medication. It is conjectural whether treatment is carried out as instructed under such circumstances."

Our patients in private practice required no special urging to comply with instructions regarding the use of Asterol. Initially they found Asterol acceptable to use because it did not stain, left no unpleasant odor, and was non-irritating. Moreover, most of the patients observed sufficiently rapid improvement to encourage their full cooperation for the entire period of treatment.

#### CONCLUSIONS

1. Following Asterol treatment of superficial fungus infections of the hair, skin and nails, forty-four out of fifty patients (88%) were discharged as cured. Two patients showed definite improvement. Four patients failed to respond to treatment. Only one case of local irritation was observed in this group.

2. Asterol proved to be an effective drug for the treatment of superficial fungus infections.

3. The potent antifungal activity of Asterol is complemented by good tolerability, mild keratolytic effect, and by the fact that it leaves no unpleasant odor or stain.

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#### Psychological Care of the Cancer Patient.—

While good psychology is desirable with all sick persons, it is particularly necessary in the case of patients suffering from cancer. Most people throughout their lives have known nothing about cancer except the terminal stages. Cured cancer patients have usually concealed the fact that they have had the disease from both their friends and even from close members of their families. This secretive behavior has caused cancer to be considered by a large majority of people as totally incurable and associated in its last stages with suffering and ultimately with death. In most persons even the suspicion of having cancer produces an immediate and marked depressive state.

I have always felt that cancer patients could be best served by telling them the truth about the diagnosis of their condition and the possibilities of arrest and permanent cure. It seems the height of foolishness to believe that a patient will undergo serious surgery or allow the administration of x-ray and radium therapy and still remain in ignorance of the fact that he has cancer. Telling the patient the truth tends to break down the barriers between the patient and the physician and allows the patient to ask for and receive a tremendous amount of comfort from the attending doctor. It also allows the family of the patient to give him the love and sympathy and attention which he deserves instead of carrying on the false pretense that there is practically nothing wrong and that there is absolutely nothing to worry about.

I have always practiced telling patients with cancer that they had cancer and discussing the condition with them in full. I have never had any cause to regret this course of action, and I am firmly convinced that the patients not only become more cooperative in receiving treatment and in listening to advice, but, since they have had all of the vague doubts and fears dispelled, they are able to face the actual facts of the condition in a much better frame of mind. The human mind is so constituted that there is nothing which can produce more torment than uncertain fears of the unknown, coupled with an inability to discuss fears and worries with another person. While on a practical and clinical basis I had arrived at this conclusion, I was very glad to know that Finesinger and his associates had made a very exhaustive study of the psychological conditions of cancer patients who had been told that they had cancer and the psychological condition of cancer patients who had not been told. From this study they found that the patients who had been told their condition and had had this matter frankly discussed with them were practically always in a much better psychological state than the ones who had not been told the truth about their disease.—Callaway, J. M. A. Georgia, November '52.



## CURRENT TREATMENT OF TUBERCULOSIS

ARTHUR J. VIEHMAN, M. D.

Medical Director

Jefferson Tuberculosis Sanatorium

Birmingham, Alabama

Although tuberculosis had been a problem of society for centuries and in spite of occasional flashes of insight on the part of various clinical observers, it was not until 70 years ago that progress began in the treatment of the disease. At that time, 1882, Robert Koch divested this malady of the superstition and ignorance which had surrounded it by discovering its cause and means of spread. The identification of the tubercle bacillus started a long train of developments in the treatment field—developments which continue today, though the basic approaches have been retained. However, in recent years, a triad of these basic approaches have been vastly modified. They are climate, diet, and heliotherapy.

Statistics show that sanatoria in cities and in climates which are not above reproach can point to rates of cure and salvage which are similar to those obtained by sanatoria differently located. Likewise, the western states which attract the tuberculous have the highest death rates from this disease of all the states, which certainly would not be true if the climate of those states possessed a magical curative quality. Yet, even today, occasionally a tuberculous patient is advised by his physician to sell his goods, tear up his roots, for a fruitless chase of the will of the wisp among alien corn.

At one time, on the theory that a high intake of calcium gave an abundant supply to the body so that tuberculous foci could be solidified, patients were fed diets in which milk and eggs predominated. Those of you who have suffered under the relentless lash of a rigid diet, or who have imaginations lively enough to envisage this situation, can well understand why, in the minds of most patients, the udder and the oviduct joined the company of the iron maiden and the rack. The futility of this approach was proved when it was pointed out that the gastrointestinal tract was capable of absorbing just so much calcium and no more; that any excess was excreted in the feces; that cod liver oil increased this absorption only

slightly; and that an adequate supply of this mineral was obtained from the average normal diet.

Heliotherapy remains an important adjunct in the treatment of tuberculosis of the bone, joints, nodes, abdomen, and skin. However, it is definitely contraindicated in the pulmonary form of the disease, and sun bathing should never be advocated.

Dr. Edward Livingston Trudeau pointed out the desirability of rest in the treatment of tuberculosis, and rest remains the basis of treatment today, and in all probability will remain so. Other procedures are used as adjuncts to rest, and not substitutes for rest. This important fact is frequently forgotten, particularly by those who attempt to treat this disease as an office or a home problem. The University of Chicago proved some 10 years ago, after studying a lengthy series of cases, that attempting to eliminate bed rest, preferably in a sanatorium, from a pneumothorax regimen decreased the patient's chance of recovery by 50%. Since Dock demonstrated that by lying down the blood pressure in the apices became equal to that found in the remainder of the lungs, while in the upright position the pressure was lower than in the remainder of the fields, attempts have been made to utilize this observation in treatment. Recent reports out of South Africa indicate that many patients benefit from lying in a bed which has the foot elevated.

Associated with physical rest, we would be remiss in not mentioning the importance of mental rest. A patient whose mind is assailed and tortured by fears, doubts, discouragement, and financial and marital worries is a patient whose recovery is either retarded or blocked. Therefore, we consider it to be of the utmost importance to have a well staffed social service department, and a medical and nursing staff made up of individuals with patience and understanding. Probably no other type of institution can profit as much by making the Golden Rule the working formula of the hospital.

The announcement in 1896 by Forlanini that he had successfully used pneumothorax

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Read before the Alabama Trudeau Society, Birmingham, May 22, 1952.

for the first time marked a major step in our regimen of treatment. Pneumothorax remains today one of our leading weapons, and, in my opinion, is largely responsible for the diminution in the death rate found during the last several decades. The emphasis by detractors of the complications and disadvantages of this form of treatment should not blind us to its extreme value if properly administered to properly selected cases.

In many areas of the country, extra-pleural pneumothoraces have been abandoned, largely because of the high incidence of empyema, unexpandable lungs, and bronchopleural fistulae. Without having an explanation for the phenomenon, it must be said that in the hands of the surgical department in our sanatorium, extra-pleural pneumothoraces remain among our most successful forms of collapse.

We have given up fighting obliterative pleuritis with oleothoraces and have stopped using paraffin plombages because of the discouraging number of empyemata and bronchopleural fistulae.

Thoracoplasty remains a procedure of utmost importance for those patients whose disease requires permanent collapse; and that such a need actually exists was demonstrated several years ago in Peter Bent Brigham Hospital of Boston, where a study was made of a series of autopsies done on patients who had died from causes other than tuberculosis but who had had thoracoplasties in the past. It was noted that in practically every case, when the lungs were removed from under the thoracoplasty, the cavities reopened, thus demonstrating a lack of healing ability on the patient's part. Even when resection is done for tuberculosis, a thoracoplasty is frequently done also.

With the publication of Banyai's book, pneumoperitoneum was rediscovered by many who were unaware of the fact that this form of air collapse was not new. For many years it had been used for bilateral disease, cases in which pneumothorax could not be instituted because of pleural symphysis, and for tuberculous enteritis. The records of sanatoria showed that, from the standpoint of results, pneumoperitoneum was not as effective as pneumothorax, and so was considered the treatment of second choice. Also, it must be remembered that air embolism, sometimes fatal, and effusion are complications of pneumoperitoneum, just as they are of pneumothorax.

Phrenic crush is not used as frequently as formerly, even associated with pneumoperitoneum. A series reported from North Carolina several years ago seemed to indicate that phrenic crush did not improve the results from pneumoperitoneum, and that it had the disadvantage of a higher percentage of residual bronchiectasis because of interfering with the cough reflex and ability of the lungs to drain their dependent portions properly.

Decreasing the size of cavities by applying constant suction, the Monaldi procedure, is used only occasionally because it has not met with the success that was expected of it. The same is true of the procedure of exteriorizing cavities—the Elaesser flap operation.

The use of plastic balls in an extra-pleural pocket was hailed as a great boon because of giving permanent collapse without the twin disadvantages of scoliosis, as follows thoracoplasties, or bronchopleural fistulae, as follows the use of other foreign material. This form of treatment has not yet met with widespread acceptance.

One of the dreaded disadvantages of pneumothorax has been unexpandable lungs, due to organization of fibrin deposits on the parietal and visceral surfaces. This problem has been met, with varied success, by stripping the fibrin deposits off the lung surfaces—decortication—or by “dissolving” this deposit with the enzyme mixture streptokinase-dornase. These procedures are not as successful in unexpandable lungs associated with tuberculosis as they are when the condition has some other cause. This is because the lack of expansion in a tuberculous lung is also due in part to the resulting intrapulmonary fibrosis, which is proportionate to the amount of disease, the amount of collapse, and the length of time the lung has been collapsed.

Resection of the affected portion of lung tissue is used more than formerly, and many brilliant results have been obtained. One word of warning must be stated in connection with this form of surgery. I have heard the statement made that resecting the diseased lobe or portion of lobe removed the disease. This ignores the fact, which has been accepted from time immemorial, that tuberculosis is a generalized disease, and resection of an obvious focus of infection in no way precludes the appearance of an active form of the disease elsewhere at a later date.



The slow spread of the Barach lung immobilizer, a modification of a respirator which allows an absolute minimum of motion and maximum of rest, is due to the bulk and expense of the equipment. Then, too, the results from this device are spotty.

A chemotherapeutic approach to tuberculosis has been sought for generations. Such substances as tuberculin and toxoid have been tried and abandoned. The apparently first successful one appeared approximately 9 years ago when, with great fanfare, a popular magazine hailed a diaminodiphenylsulfone called Diasone. A short while later another of this same family appeared, accompanied by a blare of the same trumpets. This time it was Promin. Both of these drugs were disappointing because of their high toxicity. Promin still survives and is used intravenously as part of the treatment regimen of tuberculous meningitis and in tuberculosis among children. Its greatest use and success is in Hansen's disease.

Streptomycin proved an important advance, particularly in the predominantly exudative type of the disease. Because of its tendency to disturb balance and hearing, and because of other evidence of toxicity, such as dermatitis, a less toxic form was sought and found in dihydrostreptomycin. Some caution in its use became necessary when it was observed that this form of the antibiotic caused irreversible deafness upon occasion, and that it appeared as much as two years after the drug was stopped, and that its appearance was not heralded by warning symptoms.

No rigid treatment regimen has been universally agreed upon, but inasmuch as tuberculosis is essentially a lymphoid disease, and the streptomycin level in the lymph remains high long after it decreases in the blood stream to below therapeutic levels, its use can be different than when it is used for other illnesses. One gram intramuscularly every second or third day seems to be the most popular dosage currently. One of the disadvantages early recognized was the fact that, after 42 days of use, an increase in the number of streptomycin-fast strains emerging can be found. Edwin A. Doane and Emil Bogen (*Am. Rev. Tuberc.*, August '51) reported strains which seem to thrive on this antibiotic, so that care must be exercised to avoid doing the patient a real harm.

Streptomycin, according to the work of Steenken, cannot be relied upon as a pro-

phylactic to prevent spread. Likewise, it cannot be used as a substitute for standard forms of treatment, because it is bacteriostatic, not bacteriolytic, its effect being interference with the environment to prevent reproduction of the bacilli. Indiscriminate use of streptomycin should also be discouraged because of the higher percentage of bronchial stumps opening after lobectomies in streptomycin-treated patients, compared with those who had not been so treated. Although a combination of potassium iodide and streptomycin has been advocated, the basic premise of this approach has not been proved. The para-aminosalicylic acid salt of streptomycin gives promise of eliminating undesirable side effects, while at the same time lowering the amount of drug necessary for therapeutic benefit.

Para-aminosalicylic acid (PAS), by interfering with oxygen consumption, likewise is a bacteriostatic agent which seems to enhance the effect of streptomycin when used in conjunction with it, as well as preventing to some degree the emergence of streptomycin-fast organisms. This drug should be given to tolerance, which will be from 8 to 12 grams daily. Nausea and diarrhea are common toxic effects and are frequently the reasons for a patient's inability to take it. As with streptomycin, a discouraging number of PAS-fast organisms have been reported recently. This drug may be used in sodium salt IV and subcutaneously if given slowly.

A thiosemicarbazone, known in the United States as Tibione, has met with encouraging success, particularly in the tracheobronchial form of the disease. It is bacteriostatic and not bacteriolytic. Its complications are skin rashes—both maculopapular and urticarial—nausea, headache, malaise, conjunctivitis, hepatitis, leukopenia, and agranulocytosis.

The antibiotics Myomycin, Viomycin, and Chloromycetin have proved of no value in the treatment of clinical tuberculosis: the first because it is inactivated by blood serum; the second because of the large dosages required, with possibility of liver damage; and the third because its effect is not constant. Neomycin has been effective in extrapulmonary tuberculosis, but not in the pulmonary form.

The latest attempt at treating tuberculosis with a drug is isonicotinic acid hydrazide, marketed by Squibb as Nydrizid, by Hoff-

man-LaRoche as Rimifon, and by Schering as Vitubin. My information is that a total of 14 pharmaceutical houses are planning to produce this drug, probably with a total of 14 different names, a veritable pharmacopeia, all meaning isonicotinic acid hydrazide.

If given in dosages of 3-5 mgm. per kilo, it seems to increase appetite, reduce fever, increase weight, decrease cough and sputum, convert sputum, and promote radiologic improvement, even cavity closure, though the radiologic improvement is usually slow. The length of time the drug must be given is not known nor is it known how many relapses will occur at the cessation of treatment. There is a hint that hydrazide-fast organisms may emerge. It gives a suggestion that it may be bacteriolytic, as well as bacteriostatic.

The acute signs of toxicity are central in nature, with convulsions and death in the

experimental animal, associated with evidence of liver and kidney damage. Manifestations which are not considered reasons for stopping treatment are difficulty in starting micturition, nausea, headache, dizziness, postural hypotension, diarrhea, or constipation, hypochromic anemia, and increase in reflexes. Clinically, because of doses used, the serious side effects encountered in the laboratory have not been found to date.

It must be emphasized that no treatment herein discussed eliminates the use of any other treatment. Each has its place in properly selected cases, and frequently combinations of these treatments are found to be advantageous. We would find the greatest advance in treatment arising from providing a sufficient number of beds for the tuberculous so that therapy now known could be properly used.

## RESPIRATORY UROGRAPHY

A. L. ATWOOD, M. D.

Birmingham, Alabama

I believe I should explain briefly just what a respiratory urogram is:

(1) Make a flat film with catheters in and adjusted properly.

(2) On second film make a pyelogram and see that the pelvis of each kidney is filled properly and ureters plugged tight.

(3) Put in a new film and take two pictures—one on deep inspiration and the other on deep expiration. This last film, with double exposure, should show the excursion or migration of each kidney. This is respiratory urography. Details of the procedure will be given later.

The subject of respiratory urography is practically an unexplored field. I find only one man who has been doing this work. He is Dr. Elmer Hess, of Erie, Pennsylvania, now president of the American Urological Association, a good man in urology, and internationally known. He read a paper on this subject at the meeting of the Southeastern Branch of the A. U. A., in Louisville in 1939. The paper was published in the *Journal of Urology*, issue of September 1939. I wrote Dr. Hess recently and asked him if he was still doing this work and his opinion of its value in urology. He answered and said that he has been doing this work for some

time; that there is no question about it; it is very valuable, and he finds it very helpful in both the diagnosis of nephroptosis and perinephritic abscess and that I could use it to "good avail." There was nothing in the last volume of Braasch & Emmett about it, except T. D. Moore reported making three pictures on the same film. There was no comment.

I have been doing some work along this line for the past year, just run-of-the-mine cases found in any urologist's work. I have come to the conclusion that respiratory urography is a valuable aid in differential diagnosis in renal and abdominal pathology; also in making a diagnosis of subdiaphragmatic and perinephritic abscess, nephroptosis, tumors in and around the kidney, pyelitis, pyelonephritis, carbuncle of the kidney, and shadows indicative of stone in or around the urinary tract. In fact, all cases of inflammation of the upper third of the urinary tract severe enough to cause fixation, or rigidity, will show readily by this procedure. It is also valuable in nephropexy. One can determine easily if the kidney is holding or has broken loose.

This procedure in detail is as follows: Preparation as for pyelogram, by cleaning



the patient out well the night before. No solid food the day of the work. Have patient relaxed completely. Pass catheters up to kidney and make flat plate. Inspect catheters, and pull tip of catheter down one-half way of ureter. This is to avoid splint action of the catheter, preventing migration of kidney. Then inject the media until the pelvis is reasonably full. Plug end of catheters to avoid media leaking out. Then make pyelogram.

For the respiratory urogram, put in a third film, and make two exposures, one on full inspiration and one on full expiration. Patient should be coached a few times on how to breathe deeply and hold and expel

breath, to hold so that good results can be obtained. Migration may be from 0 to 7 or 8 cm. Marked inflammation causes a fixation to a certain extent, and loss of motion is determined by this method. Loss of migration corresponds to the amount of fixation, and fixation corresponds to the amount of inflammation.

Lastly, I want to say that the success of making good respiratory urograms not only depends on every step of the procedure being correct but on the ability of the x-ray technician to make good pictures—not too dark and not too light—and the ability to evaluate them after studying all three films.

## TOTAL PELVIC EVISCERATION

### REPORT OF FOUR CASES

HOWARD S. J. WALKER, JR., M. D.

Mobile, Alabama

The operation of complete pelvic evisceration has been standardized sufficiently now to allow some definite conclusions as to its worth. There is much to be done before all of the indications will be worked out but, unless some entirely new agent enters the field of therapy, present day methods of handling pelvic cancer must include the operation of complete ablation of the pelvic organs. Without this operation it is impossible to attain the maximum salvage rate in patients suffering from cancer of the pelvic organs. Since these tumors are primary in a number of different areas and the operation of total removal of all of the pelvic organs affects different physiologic units, adequate pelvic cancer surgery requires a working knowledge of these anatomic or physiologic divisions. The ideal of pelvic cancer surgery is en bloc removal of all structures invaded by tumor regardless of the primary disease. If lymph nodes involved can be removed with the major tumor en bloc, so much the better. Because of the anatomic configuration of the pelvis, lymph node dissections are not as successful from a mechanical point of view as are node dissections in other areas, such as the neck.

#### INDICATIONS

The following is a brief survey of the lesions for which total pelvic evisceration may be worth while.

1. *Urethra.* Carcinoma of the male or fe-

male urethra is rare, and usually the lesion will be either cured by some fairly simple procedure or regarded as incurable. Irradiation is of questionable benefit. The author recently saw a case which had invaded the male perineum and anus. The patient was advised to have a pelvic evisceration, but he refused. X-ray failed to control the lesion. Certainly some of the more advanced lesions which have invaded the bladder, the prostate, or other organs should be considered for pelvic evisceration.

2. *Prostate.* Carcinoma of the prostate is common, but once the disease has spread beyond the confines of the capsule the chances that it could be controlled by a local resection of the pelvic organs is not good. Distant metastases occur in a high percentage of advanced lesions, so that less heroic measures may be of as much benefit. In early cases, radical perineal prostatectomy, and in late cases transurethral resection supplemented by orchidectomy or hormonal therapy, will probably be as effective as will more extensive resections. The first total pelvic eviscerations done that I know of were performed by Dr. Eugene Bricker at the Ellis Fischel State Cancer Hospital, Columbia, Mo., in 1940 for carcinoma of the prostate. Two patients were operated on. Unfortunately both of them died postoperatively. The procedure performed was essentially the same as that usually done now, but the

treatment of shock was not adequately understood at that time.

3. *Bladder.* Advanced cancer of the bladder is well suited to modified or total pelvic eviscerations, depending on the extent of the lesions. In the male the prostate and seminal vesicles, and in the female the uterus and upper vagina should be removed routinely with total cystectomy. When lesions are more advanced it may be necessary to remove the rectum as well. Lesser procedures do not give sufficiently good results to warrant continuation in the treatment of advanced bladder cancer. Irradiation is rarely worth while.

4. *Vulva.* Carcinoma of the vulva rarely advances locally to a degree which would require total pelvic evisceration, but such a situation is easily possible. Irradiation is of doubtful value in these cases.

5. *Vagina.* Cancer of the vagina may be satisfactorily treated by irradiation in some cases, but the long range cure rates are not good. In advanced cases surgical removal by evisceration should be considered.

6. *Cervix.* Carcinoma of the cervix is primarily a problem for irradiation at the present time, and no discussion of this will be given now. However, there are occasional cases which may be benefited by initial surgical treatment. Recurrences following irradiation may be salvaged by adequate surgery, which is almost always total pelvic evisceration. In order for these patients to be saved it is necessary that all patients having irradiation therapy for cancer of the cervix be closely followed, and at the *first sign of recurrence* be referred to an adequate cancer surgeon for definitive treatment. The delay between the recurrence and referral must not be long or the patient's day of grace is frittered away. Men doing extensive work in this field have proven that some of the otherwise hopeless cases may be benefited. Dr. Brunschwig is to be credited with popularizing a more aggressive approach to this problem.

7. *Endometrium.* This is one of the most easily controlled visceral carcinomas. Various methods of irradiation and surgery have been proposed, all with some measure of success. It seems safe to say that better cure rates will result from wide surgical removal, with lymph node dissections, than by a routine type of hysterectomy. When the disease has advanced beyond the confines of

the uterus, total ablation of the involved organs is indicated. This will of course entail total pelvic evisceration on occasion.

8. *Fallopian Tubes.* Carcinoma of the tubes is so rare that it is impossible to evaluate the results of most treatment. However, surgical removal of the entire uterus, tubes, ovaries, and attached organs seems to be the treatment of choice.

9. *Ovaries.* Cancer of the ovaries varies tremendously in its histologic character and clinical activity. There are certainly extensive lesions of this type which would benefit from pelvic evisceration.

10. *Anus.* Cancer of the anus is primarily a surgical disease. Irradiation is usually of little value. In the male the lesion will not infrequently invade the prostate and base of the bladder. The female bladder is rarely involved. When the bladder is invaded, total pelvic evisceration should be considered.

11. *Rectum.* Cancer of the rectum is almost completely radioresistant and is frequently of slow evolution with extensive local involvement and little distant spread. Adequate surgery results in many cures, and excellent palliation is often achieved where cure is not obtained. Adjacent organs which are involved in tumor should be removed with the primary lesion. Patients who have invasion of the bladder by a primary carcinoma of the rectum cannot be palliated by an abdomino-perineal resection alone. The tumor merely keeps on growing in the bladder, producing strangury, hematuria, and misery. Many cancers are horrible in their evolution but the symptoms of trying to pass one through the urethra are unparalleled. The first long range cures obtained by pelvic evisceration were recorded by Dr. L. H. Appleby. These were all primary adenocarcinomas of the rectum which had invaded the base of the bladder. One was controlled 7 years, one controlled 5 years, and two controlled 4½ years at the time of his report. If these cases alone were the sole proof of the value of the operation of pelvic evisceration they would be sufficient. When pre-operative examination of the patient reveals a tumor fixed anteriorly, the surgeon should be prepared to carry out a pelvic evisceration if the remainder of the exploration warrants it. Carcinoma of the rectum involving the bladder is the most unequivocal indication for pelvic evisceration. Patients should not be denied its benefits.



12. *Irradiation Necrosis.* This is one of the better indications for total pelvic evisceration. In patients whose primary tumor has been controlled by irradiation, but troublesome sequelae of treatment exist, total removal of the pelvic organs must be considered. Vesicovaginal fistulae, bowel fistulae, etc. may be of such a serious nature that the patient will be vastly improved by surgical removal of the involved structures. Dr. Brunschwig has recently reported a very satisfactory group of such individuals.

#### TECHNIQUE

The author uses the same general plan of surgical removal outlined by Drs. Bricker and Modlin. Briefly it is as follows: Continuous spinal anesthesia with novocain is given for relaxation. The abdomen is opened through a midline suprapubic incision which starts at the symphysis and extends up to and slightly around the umbilicus. Complete abdominal exploration is then carried out to determine the local extent of the lesion, and the presence or absence of distant spread. Because of extensive local inflammation it is frequently impossible to determine the local curability until the pelvic structures are widely mobilized. The sigmoid colon is cut in two at a convenient spot, and the proximal end brought out through a circular defect made in the abdominal wall in the left lower quadrant. This is the permanent colostomy. The distal end is closed with a stitch or two and dropped in the pelvis to be removed with the other pelvic organs. The ureters are cut at a point close to the area involved in tumor, and the proximal ends are allowed to squirt urine into the pelvis until the new bladder is constructed. The hypogastric vessels are ligated, and usually cut to be removed with the specimen. As much peritoneum as is to be removed is incised, usually at the pelvic brim. The contents of the pelvis are then mobilized down to the lower border of the symphysis pubis in front and the coccyx posteriorly. Laterally the dissection is carried out to the sacral plexus and the obturator fascia. The obturator nerve is preserved.

While the abdomen is still open above, the patient is placed in the lithotomy position and the perineal dissection done. An incision is made about the entire vulva and anus if the patient is a female or the involved structures in the male. This is carried deep to the levators which are cut laterally. The mass can then be removed, and hemostasis

obtained. The perineum is closed with large interrupted silk sutures, over one large Penrose drain which is brought out the posterior aspect of the wound. A loop of terminal ileum is then isolated with its blood supply, and the proximal end is closed. Continuity of the small intestine is reestablished by an end to end anastomosis. Both ureters are anastomosed to the isolated loop of ileum by an end to side, mucosa to mucosa method using interrupted silk. The distal end of the isolated loop of ileum which is now the bladder is brought out of a circular defect in the right lower quadrant of the abdomen. Both the colostomy and the ileal bladder are sewed to the skin immediately. The various peritoneal fossae are then closed, but it is usually impossible to reperitonealize the pelvis. The abdomen is closed with steel wire to the fascia, and silk to the skin. Following surgery, a catheter is placed in the new bladder to collect urine, and the patient is started on fluids by mouth the next day. No nasogastric suction is employed unless some distension occurs. In two of the four reported cases this was not necessary. The operating time in these patients varied from 4½ to 6 hours. They received from 4 to 8 pints of blood during surgery. All were discharged from the hospital in from 12 to 16 days following surgery.

#### DIAGRAM OF G-U TRACT AFTER PELVIC EVISCERATION

The ureters enter the new bladder made out of an isolated loop of ileum. One end of the loop is closed, and the other end is brought out in the right lower quadrant of the abdomen as the new urinary orifice.

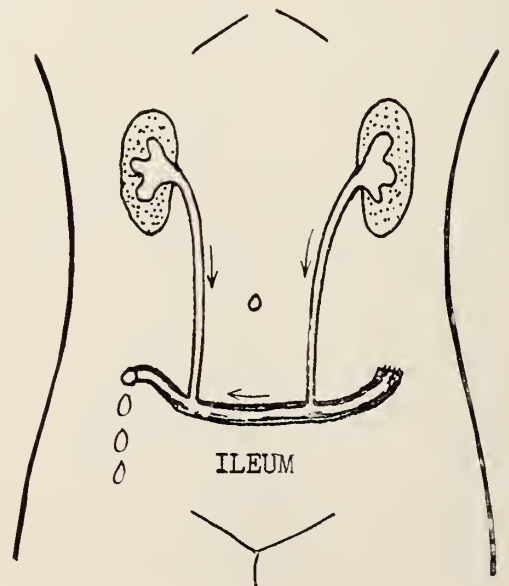
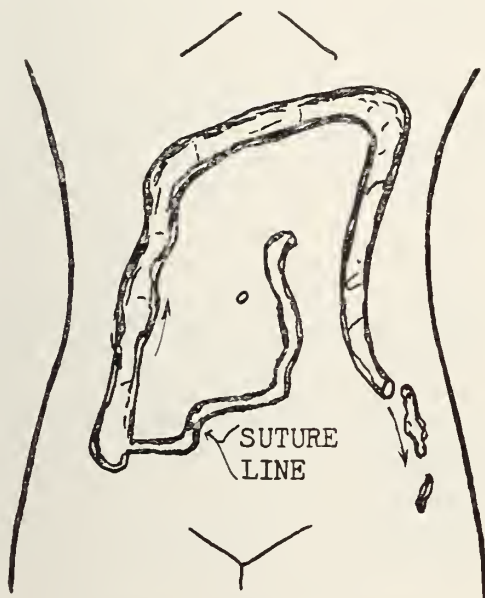


DIAGRAM OF G-I TRACT AFTER PELVIC  
EVISCERATION

The continuity of the ileum is reestablished after isolating a loop of ileum, and a sigmoid colostomy is made in the left lower quadrant of the abdomen.



RESULTS

The long range results of these reported cases are not good. Two of the four lived approximately three months, one lived eight months, and one is still living, but the surgery was done only six months ago. All were relieved of distressing symptoms for the duration of their lives following surgery, and the two with the longest survivals were well satisfied with their results. All of the deaths following pelvic evisceration were due to progression of the tumor in the abdomen. There were no major complications from the surgery. The urinary tract functioned satisfactorily in each instance. The patients collected the urine in a regular colostomy bag which was sealed to the skin with vaseline. These four cases do show that a very radical cancer operation can be performed with an acceptable mortality (none in this group), and that considerable palliation can be obtained. Only by doing this operation earlier in the course of the disease can the long range results be improved.

REPORT OF CASES

Four cases are reported, all of which were operated on at the Mobile City Hospital by the author, assisted by Dr. W. L. Nixon and other members of the resident staff.

1. (C. J.): The patient was a 37 year old negro female who had a stage IV (League of Nations' Classification) epidermoid carcinoma of the cervix. She was started on x-ray therapy, and immediately after the first few treatments of external pelvic irradiation she developed a large vesicovaginal fistula. Intravenous pyelograms demonstrated a non-functioning right kidney, and there was severe pain down the right sciatic nerve. She had been bedridden because of this and weakness for three months. She was admitted to the hospital 6 Aug. 51, and a total pelvic evisceration performed 20 Aug. 51. After an uneventful postoperative course she was discharged from the hospital 6 Sept. 51. The operation converted her from a helpless individual into a sustaining citizen capable of doing her own house work. She was well satisfied with the new bladder, and felt that collecting urine in a bag was vastly preferable to having it run down her leg. Seven months after surgery she started having pain in the distribution of the sciatic nerve, and within a few weeks was dead.

This case can be considered very worth while.

2. (V. C.): The patient was a 46 year old white female who had had a clinical stage II epidermoid carcinoma of the cervix treated with irradiation almost a year before. She developed massive local recurrences with implants down the vagina. The intravenous pyelograms showed a non-functioning left kidney. She was admitted to the hospital 6 Nov. 51 and a complete pelvic evisceration done 14 Nov. 51. She was discharged from the hospital 8 Dec. 51. Prior to surgery she had had severe urinary symptoms, and perineal pain. This was completely relieved by surgery, but her course was gradually down hill, and she expired approximately three months after her operation.

This operation was of questionable value.

3. (F. H.): The patient was a 51 year old negro female who had a clinical stage II epidermoid carcinoma of the cervix which was incompletely treated with irradiation because of progression of her lesion under therapy. She was admitted to the hospital 5 Mar. 52, operated on 19 Mar. 52, and discharged 3 April 52. Although she had had some perineal pain prior to surgery, this was relieved by the evisceration. However, her course was progressively down hill and she died about three months later.



This operation was probably not worth while.

4. (P. G.): The patient is a 38 year old negro female who had a clinical stage II carcinoma of the cervix treated with irradiation approximately one year prior to definite local recurrence. This was the first really hopeful case operated on in this group, as she was in good condition, and apparently did not have an extremely aggressive lesion. She was admitted to the hospital 13 May 52, eviscerated 21 May 52, and discharged from the hospital 4 June 52. When last heard from six months after surgery she was free from any complaints.

#### COMMENT

The operation of complete pelvic evisceration with formation of a substitute bladder is perfectly feasible. No special facilities other than a surgeon and operating room with routine major surgical instruments and blood replacement equipment are necessary for the performance of this operation with an acceptable mortality and morbidity. In this series of four cases there were no deaths as a result of surgery and no serious postoperative complications. The maximum hospital stay was 32 days including the pre- and postoperative periods. The maximum postoperative stay was 16 days. These cases represent extreme degrees of pelvic carcinoma, and probably two of them were not benefited to an appreciable degree. One of the others was greatly helped for a period of seven months, and the other is still in good shape although she has gone only six months following surgery. Probably the best indications for pelvic evisceration are advanced carcinoma of the rectum invading the bladder or prostate, post-irradiation recurrences of cancer of the cervix, and irradiation necrosis. With these cases the long range results will depend on the stage of the disease when the patient is referred to the surgeon.

#### SUMMARY

1. The operation of pelvic evisceration is described.
2. Some of the indications for pelvic evisceration are given.
3. Four pelvic eviscerations done without operative mortality are presented.

#### ADDENDUM

One more total pelvic evisceration for post-irradiation recurrence of an epidermoid carcinoma of the cervix has been done since

this was submitted for publication. The patient is comfortable two and one half months following surgery.

Van Antwerp Building.

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## PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Cases presented by  
Dr. Kermit Pitt

1—J. P., an eight month old white male, was brought to the Clinic because of painful and tender lower extremities for three weeks. The mother complained that he refused to support weight on his feet and screamed when the legs were moved for any reason. There had been some fever.

Gestation and delivery had been uneventful and the infant had seemed normal at birth. No prior illness had occurred. An evaporated milk formula with some cereal, banana and little or no fruit juice had been offered. No vitamin supplement was given.

The father, mother and an older sibling were said to be well, and familial diseases were denied.

Physical examination revealed a robust, mildly pale infant weighing 18½ pounds, with rectal temperature of 101.5 degrees. The gums about erupted incisors were swollen and beefy red. Other positive clinical findings were limited to the lower extremities which were held quite still in the "frog position" with thighs externally rotated and

knees and hips flexed. Any passive movement caused obvious and exquisite pain. No edema, redness or local heat was evident.

X-ray of the knees showed dense, white lines at the metaphyseal ends of the long bones (white lines of Fraenkel), spur formation, fragmentation and epiphyseal halos characteristic of scurvy. Hemogram indicated moderate hypochromic anemia. (Hg. 8.5 gm.; RBC 3.4 mil.).

A diagnosis of scurvy, with nutritional anemia and probable subclinical multivitamin deficiency, was made. Ascorbic acid (300 mg.) daily and a polyvitamin preparation with iron were prescribed.

When the baby returned three weeks later because of an upper respiratory infection, all clinical symptoms of scurvy had cleared and the anemia had improved.

2—J. N., an eight month old white male, was referred as a possible case of poliomyelitis. For two weeks he had resisted passive movement of the lower extremities, preferring to hold them drawn upon the abdomen. He had refused to support weight on the feet since the onset. No gastrointestinal symptoms had developed, and the mother was uncertain about possible fever.

Past history indicated uneventful gestation, labor, and delivery of a normal baby who had been offered an evaporated milk formula with little strained food and no fruit juice or vitamin supplement. Sitting alone had occurred at about seven months but no teeth had erupted.

Physical examination revealed a small, slightly pale infant weighing 16¼ pounds, with rectal temperature of 101 degrees. Other positive clinical findings were limited to the lower extremities which were held in the "frog position" with little active motion. Passive movement caused obvious pain. No redness or swelling was evident.

X-ray of the knees revealed lines of Fraenkel, spur formation, and epiphyseal halos indicating scurvy. The blood picture was one of mild anemia.

Prescriptions for ascorbic acid, a polyvitamin preparation and iron were given and a return visit requested. One week later all clinical signs of scurvy were absent.

**Discussion:** Specifically due to vitamin C deficiency, scurvy should not be difficult to recognize. The characteristic blue-red gums about erupted teeth, tender, motionless, sometimes swollen, flexed lower extremities with x-ray findings of cortical atrophy,

spur formation, and epiphyseal halos make a picture which should not be confused with that of any other disease. Low grade fever is usually present and hematuria common. Petechiae of skin and mucous membranes may occur.

Scurvy may easily be prevented or cured by 3 to 6 oz. of fresh orange or tomato juice or by 50 to 75 mg. of ascorbic acid daily. It rarely occurs in breast fed babies whose mothers consume an adequate diet.

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**Coronary Pain**—When the patient's symptoms follow one of the typical descriptions found in the literature there is seldom much doubt about the diagnosis. If, in addition, there is a prompt response to nitroglycerine there is no doubt about the diagnosis. Unfortunately, in a great number of cases the symptoms do not follow the description furnished in the literature, and it is with these cases that we have so much difficulty.

The electrocardiogram has furnished one means by which these cases can be investigated, but it must be used properly if we are not to be misled. In most instances the electrocardiogram is perfectly normal between attacks. Therefore, attempts must be made to make electrocardiograms while the attack is present. In a patient whose attacks are not frequent this may involve considerable difficulty. It involves racing to the patient at all hours of the day and night with a portable apparatus, often arriving when the attack is over. However, I have done a great deal of this and I consider the time and the energy well spent, for the returns in diagnostic accuracy have been great. However, in order to facilitate the method, I began some seventeen years ago to employ measures to precipitate attacks. The first of these was exercise. Of course exercise electrocardiograms are of no value unless the exercise is sufficiently vigorous. I have found 15 to 20 deep knee bends an excellent exercise for this purpose. It is to be remembered, however, that a normal exercise electrocardiogram alone does not rule out coronary disease. Later I learned that the characteristic electrocardiographic changes at times do not occur immediately after the exercise but may be delayed by some five to ten minutes or more, so that at the present time I make it a practice to repeat the after exercise electrocardiogram after an interval of five minutes and again at ten minutes in many cases.

Another method which I have used has consisted of reproducing, in the office whenever possible, the identical conditions under which the attacks occur spontaneously. For example, if the patient's attacks occur immediately after a meal, or upon walking after a meal, or upon lying down after a meal, I order lunch in the office for the patient and have him walk or lie down and electrocardiograms are made as soon as the discomfort begins and, of course, even if it fails to appear. In this manner I have been able to make electrocardiographic studies during attacks which otherwise could not have been made.—*Gardberg, New Orleans M. & S. J., Nov. '52.*



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E. G. Givhan, Jr..... Birmingham

J. D. Perdue..... Mobile

John W. Simpson..... Birmingham

J. Paul Jones..... Camden

## STATE HEALTH OFFICER

D. G. Gill..... Montgomery

## DELEGATES AND ALTERNATES TO THE AMERICAN MEDICAL ASSOCIATION

Delegate—C. A. Grote..... Huntsville

Alternate—G. A. Denison..... Birmingham  
(Term: January 1, 1951-December 31, 1952)

Delegate—J. Paul Jones..... Camden

Alternate—D. G. Gill..... Montgomery  
(Term: January 1, 1952-December 31, 1953)

## AN IMPORTANT COMMUNICATION

To All

Physicians in Alabama

It is the purpose of this important letter to give you the conclusions reached by the State Board of Censors on October 8 after a full discussion of the problem presented by the chiropractor. You are aware that, over the years, chiropractors have attempted to procure from the Legislature their own board of examiners and thus be removed from the law, so long in effect, that an applicant for a certificate of qualification to treat diseases of human beings by any system of treatment whatsoever must be examined by the Board of Censors acting as a State Board of Medical Examiners. Efforts to obtain their own separate board were renewed in the Legislature of 1951 and with such hope of success that only by the introduction of a counter measure by friends of the medical profession were their purposes defeated. It is conceded they will try again in 1953.

The counter measure offered in opposition to the legislation sought by the chiropractors, and which kept them from attaining their end, has been before our County Medical Societies in recent weeks for their consideration in order that the Board of Censors might have their views as to whether the proposed measure offered any possibilities as an answer to the problem should chiropractors continue their efforts for recognition in the Legislature of 1953. By a majority vote the Societies said they did not think the correct answer had been found, and by implication called on the Board of Censors to pursue the subject further.

It was for this purpose that the meeting of October 8 was held, and out of it came these conclusions:

1. That every effort will be made to preserve without modification the provisions of the State's present Medical Practice Act.

2. That any bill introduced in the Legislature seeking to set up a separate examining board of chiropractors or in otherwise recognizing them will be vigorously opposed.

3. That if such a bill is introduced, every County Medical Society will be expected to send as many of its members as possible to Montgomery to voice the objection of the Society to the bill when hearing is held on it by the Committee of the Legislature to which it may have been referred.

4. That, in the meanwhile and without waiting for the Legislature to meet, every member of the State Medical Association should discuss with his Senator and Representative the fallacies and dangers of claims made by chiropractors; and in order that they may know that, acting in the interest of the health of the people of the State, the medical profession will continue to oppose all legislation looking to their recognition.

Sincerely yours,

E. V. Caldwell, M. D.,  
Chairman.

# SMOKING AND ASTHMA

"No patient who has asthma should smoke. Smoke of any type is irritating, not soothing, to mucous membranes. Smoking induces cough, bronchitis and bronchospasm, which are nature's warning to avoid or to expel the irritating effects of smoke. Likewise, any temporary benefit that patients derive from smoking so-called asthma cigarettes or burning powders which contain stramonium or nitrates is nullified by the deleterious effect of the smoke itself, which aggravates the patients' bronchitis. All patients with asthma have some degree of bronchitis. Most asthmatic persons have considerable bronchitis, as evidenced by inflamed, red, swollen, mucous membranes, covered with protecting mucus, and associated with some degree of bronchospasm. Such inflamed membranes are extremely sensitive to such irritants as dust, smoke, fumes, cold air, and strong odors.

"Smoking is one of the most common sources of bronchial irritation, and invariably increases cough and asthma when continued any length of time. No patient with asthma should irritate his inflamed membranes with smoke, any more than a patient with conjunctivitis should blow smoke in his eyes; yet much high-pressure salesmanship is being exerted upon the public to encourage smoking. Although tobacco companies advertise how much less irritating their own brands of smoking tobacco are than some competitors' products, the fact remains that all types of smoke are irritating to mucous membranes. Recognizing the irritating effects of smoking, the tobacco companies now supply built-in filters on their cigarettes, or treat them with menthol to allay burning of the tongue and throat, and various types of holders and filters are marketed to reduce the irritation produced by smoking. If there were no irritation there would be no market for such filters and devices."

The above are the opening paragraphs of the brief but excellent article by Peters<sup>1</sup> and his co-workers dealing with this subject. The Rochester observers go on to tell us that "We are all familiar with 'smoker's tongue,' 'smoker's cough,' 'smoker's throat,' and 'smoker's bronchitis.' These are no figments

of the imagination. Take tobacco away and these effects of tobacco smoking clear up entirely, in most instances. Myerson has recently written about 'smoker's larynx' and he pointed out the irritation of excessive smoking as noted in the larynx. It is interesting that a well-known present-day textbook, in discussing the treatment of asthma and emphysema, mentions nothing or very little about discontinuance of smoking. It is likewise odd that in a recent medical paper on chronic cough the role of tobacco was not mentioned. One wonders if the authors were heavy smokers."

And we are further informed that "If a patient has asthma, it is not enough to reduce smoking; it must be completely stopped. If even a normal person smokes a package of cigarettes daily over an extended period, a chronic cough, bronchitis and expectoration will frequently develop. The asthmatic patient with his sensitive, inflamed respiratory passages will respond to similar irritation even more quickly, and it is not long before coughing and wheezing ensue." The Mayo clinicians state in conclusion that "It should be axiomatic that patients who have asthma should not smoke. Just as a patient will never receive very convincing advice about reduction of weight from an obese physician, so also he or she may not be told to stop smoking by the physician who himself is a heavy smoker. Nevertheless, the best possible regimen for the relief of chronic asthma may fail if the patient is allowed to continue smoking."

The Rochester group has done well to call our attention to a fact that should be perfectly obvious. But, human nature, both medical and lay, being what it is, it will probably be most difficult to persuade asthmatics that they must discontinue smoking. For a long time many patients, especially those with gastric ulcer, have been earnestly advised not to smoke, but many have ignored this advice. Peters and his co-workers are upon especially firm ground when they remind us that most patients may not relish being told to stop smoking by a doctor who himself is a heavy smoker.

## NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The sixteenth annual meeting of The New Orleans Graduate Medical Assembly will be held March 2-5, 1953, with headquarters at the Municipal Auditorium.

1. Peters, Gustavus A.; Prickman, Louis E.; Koelsche, Giles A., and Carryer, Haddon M.: Smoking and Asthma, Proc. Staff Meet., Mayo Clinic 27: 329 (Aug. 13) 1952.



Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. In addition, the program will include a symposium on "The Value of Newer Drugs," daily demonstrations of medical and surgical procedures in color television, clinicopathologic conferences, medical motion pictures, over 100 technical exhibits, and three round-table luncheons.

The Assembly has planned another interesting postclinical tour to follow the 1953 meeting in New Orleans. On Saturday, March 7, a party composed of doctors and

their families will leave New York for Europe on the great new superliner, S. S. United States. The itinerary includes England, France, Switzerland and Italy, and arrangements have been made for medical programs in these countries. The tour ends in Rome and the group will return to New York on March 31 by Pan American World Airways, President Special.

Details of the New Orleans meeting and the postclinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### ONE VARIABLE ASPECT

W. A. Dozier, Jr.

Director of Public Relations

The following syndicated release appeared recently. It opens up a number of interesting ramifications, whether divergent or otherwise.

Cleveland (AP)—Medical bills could be cut if doctors prescribed fewer trademarked or proprietary drugs, says a study reported today to the American Public Health Association.

Cheaper, identical drugs, not trademarked, often are available, it says.

This study of doctors' prescriptions was made by Dr. Frank F. Furstenberg, Matthew Taback, Harry Goldberg, and Dr. J. Wilfred Davis of the Baltimore city medical care program.

The Baltimore program gives medical care to indigent persons, who are assigned to clinics for diagnosis. The clinic report usually goes to neighborhood doctors—chosen by the patient—who direct the treatments. Prescriptions are written on a specially-designed form, honored by all local pharmacies and paid for by the care program.

Drug prescriptions for one year in 1950-51 cost \$150,000 or 30 per cent of the entire expenses of the program.

The study of prescriptions said \$9,000 in tax funds would have been saved if doctors had prescribed officially-accepted drugs which are not trademarked, but have identical properties.

Over 55 per cent of prescriptions were for proprietary drugs, and 37 per cent were for drugs not accepted by any official medical or health agencies.

"It is noteworthy that 24 per cent of simple aspirin compounds were written with a trademarked name or for a preparation not accepted by any official authority.

"The prescribing of traditional cough medications . . . has been all but forgotten and they have been replaced by a multitude of higher priced proprietary cough mixtures."

Drug costs, either in welfare programs or for patients paying their own way, "is a major problem of modern medicine" and was a problem before antibiotics were discovered, the study says.

Without going into the many facets that one would like to pursue after reading the above, one feels impelled to wonder about an aspect which perhaps cannot be measured. That is the question of just how much the patients' wishes were catered to in prescribing. And in prescribing something acceptable in the minds of the patients, did the physicians receive enough advantage, psychosomatically speaking, to warrant the additional necessary expenditure?

The aim here is not to answer but to plant the question. How much influence do patients' demands have on the writing of prescriptions? An investigation of this matter might be helpful in all aspects of the socio-economics of medical care.

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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

### THE ENEMIES OF CHILD HEALTH

You and your child are susceptible to about the same degree to a number of diseases. Some, however, are a greater menace to youngsters than they are to you, while some others are much more likely to strike down somebody of your age than a child.

Let us consider at this time some of those which are particular factors in child health. A few of them may also figure importantly in the health and general well-being of older people. But we shall devote our attention primarily to their effect upon youngsters.

Take appendicitis, for example. Many people think of it primarily as a disease of older people. Many indeed hardly think of it at all in terms of child health. Yet anybody (except of course someone who has had his appendix removed) may have appendicitis. For that tiny part of the body, normally no larger than a fish worm, can become infected inside a first-grader's body as well as in the body of that youngster's father or grandfather. And, when it does, it can cause plenty of trouble, not to mention pain as sharp and severe as any you are likely to experience in your life. Whether it is a child's or an adult's appendix that begins to "act up," it usually creates a stomach-ache which someone has called the daddy of all stomach-aches. It may start in what is known as the "appendicitis region," the lower right-hand section of the abdomen. But—and keep this in mind—it may not. It may start almost anywhere in the abdomen. However, it usually settles later in the "appendicitis region." Parents need to remember that a pain should not be attributed to some cause other than appendicitis simply because it is not felt first in that region. For it may take time to settle there. And in appendicitis, time is of the essence. A sharp pain anywhere in the abdomen should make a parent think of this disease. If it lasts more than an hour, a doctor should be called. Meanwhile, do not give the child

laxatives of any kind. Do not give him an enema. Give him nothing at all to eat and nothing to drink except a little water. Do not apply anything hot or cold—hot water bottle or ice bag—to the abdomen. To do so might afford temporary relief. But that might cause you to think the child does not have appendicitis. The doctor will advise about the use of one or both of these after he arrives and makes his examination. Reduce the child's activity to a minimum. Keep him in bed, or lying on a sofa.

Fortunately, appendicitis is not a dangerous disease, among children or among adults, if treated properly and promptly by the surgical removal of the infected appendix. But it may become serious indeed, not to say fatal, if surgery is delayed or if unwise things, like the taking of laxatives, are done.

We have been hearing a great deal about poliomyelitis, or infantile paralysis, in recent years. It has risen close to the top of the list of childhood diseases. You hardly need to be told about its nature or about the damage it does. You probably have seen some of its worst victims—the boys and girls who get about as best they can on braces or crutches. And you probably have also seen adults who had poliomyelitis in their childhood and still are crippled or handicapped. But poliomyelitis is not as frightful as you may think. For one thing, those who have to use braces and crutches represent what we might call extreme cases. For every person you see permanently crippled by it, there are many who have recovered with no crippling or noticeable changes whatsoever. Others have only slight limps or minor impairment of normal functioning of other parts of the body. As Dr. J. Roswell Gallagher wrote in his booklet, *Your Children's Health*, "the chances of getting a severe attack are very slim." There is comfort in the records of the National Foundation for Infantile Paralysis. They show that more than half of those who contract recognized cases of infantile paralysis recover completely. And remember too: Millions of people have had poliomyelitis without knowing they have had it. Some authorities say the un-



recognized cases outnumber those that go into public health records by as many as 100 to one.

Much still remains to be learned about this disease. But it is well established that your child can get it from direct close physical association with someone who has it. Utensils and other articles which poliomyelitis victims have handled can act as depositories of the tiny virus causing the disease, and your child can get the virus from handling those articles. He can also get it from water containing the excreta, or body discharges, of polio victims. And food containing the virus, transmitted by flies, may add your youngster to the rapidly lengthening rolls of poliomyelitis victims. (Tests conducted in Walker County, Alabama, some years ago showed that flies' bodies do contain the virus after coming into contact with poliomyelitis victims' body discharges.)

To play safe, as far as infantile paralysis is concerned, don't allow your child to become over-fatigued, especially when poliomyelitis is unusually prevalent in the community. Do not allow him to become suddenly chilled either. Keep him out of crowds in epidemic time. Be sure the swimming pool, river or creek where he goes in swimming has been approved by the public health authorities. Watch him to be sure he does not put small toys or other articles into his mouth. These may be loaded with the polio virus. Make him practice cleanliness. Remember the hands can become virus trains, too. Do not let your child put his fingers into his mouth. And be sure he washes his hands before eating.

Tuberculosis is another form of illness that is much more prevalent among young people than most of us realize. As a matter of fact—and this may come as a surprise—no other disease kills so many children as this one. It is second only to accidents as a killer at that age.

If your child should start coughing and keep it up for two or three weeks, you should think seriously about tuberculosis. The same is true if he should lose weight rapidly, if he should cease to be interested in normal childhood activities or if he should appear worn-out in the early afternoon. There are a number of other conditions that may be responsible. But you cannot be sure. At least you cannot be without the help of experts. Thanks to the x-ray and other diagnostic agencies, your family doctor or tu-

berculosis specialist can give you a clear, unmistakable answer to this question. Older children—those over 12—are required to be x-rayed under Alabama's compulsory tuberculosis diagnostic campaign brought into being several years ago by the Legislature. But if your child shows any of the symptoms which have been mentioned or if you have other reason to think he may have tuberculosis, you should not wait for that x-ray time. Your family doctor can either give him an examination in his own office or direct you to a tuberculosis specialist who can do so. If you feel that you are not financially able to meet this expense, you can obtain an examination of this kind without charge through your county health department.

Children may also have diabetes, although this, like certain other illnesses, is more prevalent among those who have reached or passed middle age. (You may have read or heard about the camps for diabetic children which are conducted every now and then.) This disease prevents its victims from utilizing the sugar they take into their bodies. Unable to contribute to strength and general body building, it is eliminated in the urine. Children of parents who have, or have had, diabetes are more likely to have it than others. Watch out for an abnormal craving for water and food, loss of weight and physical weakness. Obesity adds to the tendency to have diabetes. So do not let your child get much overweight.

Children have the venereal diseases, too. Syphilis can be inherited if the mother has the disease and is not under treatment for some time before her baby is born. Gonorrhea is not inherited in the usual sense of the word. That is, the unborn baby does not get it as he may get syphilis. But a baby may get gonorrhea at the time of birth through contact with the germ present in the birth canal. It is possible for a baby to become blind as a result of getting these germs into his eyes at that time. To prevent that, Alabama law requires that the eyes of all newborn babies be treated with a special solution which protects them against this type of infection. Similar laws are in effect in other states.

The danger of contracting a venereal disease from drinking glasses, towels and other articles which have been used by victims of these diseases is not very great, it is true. But it exists nevertheless. Parents should warn their children against the indiscrimi-

nate use of such articles. This does not mean that they need to be afraid to use the rest rooms, lunchrooms, silverware and other facilities at their schools. These places are under the supervision of public health agencies. Those who use them are, or should be, free from those diseases. Nor need youngsters worry about eating in most restaurants and cafeterias. But they should be warned against using such facilities in places that are obviously not well kept and insanitary.

The so-called "childhood diseases" may be considered as a group. They consist of diphtheria, whooping cough, measles, chickenpox and mumps. The first three of these—diphtheria, whooping cough, and measles—may be largely prevented by immunization. The most complete protection, however, comes from having had them. Parents wishing their children to avoid these diseases should keep them away from those who have them. Some parents take the position that it is well to let their children have them and "get it over with." Medical opinion is in disagreement as to the wisdom of this. In either case, it is well to obtain medical advice. The State Health Department furnishes free diphtheria toxoid and pertussis (whooping cough) vaccine to county health departments and private physicians. It also makes available in the same way what is known as immune globulin, which provides temporary immunity to measles. Whether this should be used in a particular case should be decided by a physician. If administered by your county health officer or some member of his staff, there is no charge of any kind for the protection afforded by these products. When administered by a private physician, he is naturally entitled to a reasonable fee for their administration.

Another form of illness to which youngsters are more susceptible than many adults realize is tetanus. A person gets this by stepping on a nail or in some other way penetrating the skin barrier with some object infected with the tetanus germ. This germ, often found in the discharges of animals, especially horses, remains in the soil for a long time. More important, it remains active and dangerous there indefinitely. A youngster working around a barnyard should be particularly careful not to injure himself in such a way that these germs, in the soil or on sharp instruments or implements, will have a chance to get inside the

body. Children at play around the house or in the yard may also pick up these tiny organisms. Remember that the instrument or implement causing an injury need not itself be infected. It can be entirely free from those germs. But, if it produces an opening in the flesh, it may open the way for those germs to enter from some other source. For example, if a youngster cuts himself on the foot with a piece of glass that has not been in association with tetanus-infected soil and then hobbles through ploughed ground to get to a doctor, he can get tetanus from the germs in the soil.

Fortunately, parents can give their children a considerable measure of immunity to tetanus. Starting during the child's first year, they can see that he receives what is known as tetanus toxoid. Then "booster shots" should be given at intervals of about every five years thereafter. The protection afforded in that way is not complete, however. After being exposed to the germs, a person should take another "booster shot" immediately. That should keep him safe.

If he has not taken those periodic "shots" of tetanus toxoid, he should take tetanus antitoxin without delay after such exposure. At such a time hours, even minutes, count heavily.

Tetanus toxoid, like whooping cough vaccine, diphtheria toxoid and certain other products, is furnished free to county health departments and private physicians. Tetanus antitoxin is sold at actual cost.

Childhood should be a happy time. But it cannot be happy if children are sickly or seriously sick. A little precaution can do much to keep them healthy.

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**Ectopic Pregnancy**—In patients with damaged but patent tubes, tubal pregnancy is more likely to develop. Tubal occlusion may be prevented or converted to patency in patients with diseased tubes as a result of penicillin therapy. Since the advent of antibiotics, the reported incidence of ectopic pregnancy in various areas of this country has approximately doubled. The incidence of ectopic pregnancy in our own private practice is approximately three times as great as in those patients attended by other physicians at the Cedars of Lebanon Hospital during the same period. Furthermore, it is almost four times greater than the incidence that we encountered in private practice 10 years ago, prior to the use of penicillin. This difference in the incidence ratio appears to be directly related to the number of patients who received penicillin prior to the development of the ectopic pregnancy. Penicillin therapy in pelvic inflammatory disease may be an important etiologic factor in ectopic pregnancy.—*Krohn et al., J. A. M. A., Nov. 29, '52.*



**BUREAU OF LABORATORIES**

Thomas S. Hosty, Ph. D., Director

**SPECIMENS EXAMINED**

September 1952

|   |        |
|---|--------|
| Examinations for diphtheria bacilli and Vincent's .....         | 549    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 1,013  |
| Brucella cultures .....   | 13     |
| Typhoid cultures (blood, feces and urine) .....                 | 607    |
| Examinations for malaria .....                                  | 250    |
| Examinations for intestinal parasites .....                     | 3,140  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 30,201 |
| Darkfield examinations .....                                    | 4      |
| Examinations for gonococci .....                                | 1,763  |
| Examinations for tubercle bacilli .....                         | 2,866  |
| Examinations for meningococci .....                             | 0      |
| Examinations for Negri bodies (microscopic) .....               | 74     |
| Water examinations .....  | 1,763  |
| Milk and dairy products examinations .....                      | 4,023  |
| Miscellaneous .....   | 904    |
| Total .....   | 47,170 |

**BUREAU OF PREVENTABLE DISEASES**

W. H. Y. Smith, M. D., Director

**CURRENT MORBIDITY STATISTICS**

1952

|                               | Aug. | Sept. | E. E.*<br>Sept. |
|-------------------------------|------|-------|-----------------|
| Typhoid and paratyphoid ..... | 20   | 11    | 8               |
| Undulant fever .....          | 6    | 5     | 0               |
| Meningitis .....              | 11   | 11    | 7               |
| Scarlet fever .....           | 16   | 24    | 39              |
| Whooping cough .....          | 9    | 23    | 45              |
| Diphtheria .....              | 17   | 84    | 48              |
| Tetanus .....                 | 4    | 4     | 6               |
| Tuberculosis .....            | 190  | 223   | 232             |
| Tularemia .....               | 0    | 1     | 0               |
| Amebic dysentery .....        | 0    | 2     | 3               |
| Malaria .....                 | 20   | 5     | 44              |
| Influenza .....               | 13   | 98    | 46              |
| Smallpox .....                | 0    | 0     | 0               |
| Measles .....                 | 55   | 29    | 16              |
| Poliomyelitis .....           | 62   | 68    | 38              |
| Encephalitis .....            | 2    | 2     | 1               |
| Chickenpox .....              | 5    | 1     | 4               |
| Typhus fever .....            | 1    | 0     | 24              |
| Mumps .....                   | 27   | 12    | 26              |
| Cancer .....                  | 393  | 340   | 275             |
| Pellagra .....                | 2    | 6     | 2               |
| Pneumonia .....               | 139  | 45    | 75              |
| Syphilis .....                | 260  | 123   | 1177            |
| Chancroid .....               | 6    | 8     | 14              |
| Gonorrhea .....               | 473  | 307   | 605             |
| Rabies—Human cases .....      | 0    | 0     | 0               |
| Positive animal heads .....   | 40   | 26    | 0               |

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

**ANNUAL SESSION****BIRMINGHAM**

APRIL 16, 17, 18, 1953

**BUREAU OF SANITATION**

Arthur N. Beck, M. S. in S. E., Director

**LEAD POISONING**

Contributed by

Walter S. Davis  
Public Health Engineer

and

James N. Smith, Jr.  
Chemist

Toxic effects of lead on the human organism have been recorded in very early writings. In 370 B. C. Hippocrates described colic in an extractor of metals; and in the second century B. C. Nicander mentioned the relationship of lead to constipation, abdominal pain, pallor, and palsy. Many early writers showed that the ingestion of lead would produce colic and paralysis, but it was not until Stockhausen's treatise in 1656 that the importance of the inspiration of lead dusts as a causative factor in plumbism was recognized. During the Middle Ages most cases of lead poisoning were caused by the ingestion of wine or cider which had dissolved lead from their containers, or by the ingestion of food which was adulterated by lead compounds. However, in 1757, Tronchin described colic in lead workers; and, in 1839, Tanquerel Des Planches published an epoch-making book which outlined the signs and symptoms of lead poisoning so accurately and completely that he is generally considered to be the father of our knowledge of lead poisoning, although Grisolle had given a good clinical description of colic, lead line, and encephalopathy three years previously. That these early writers were keen observers is attested to by the fact that little information, of importance, has been added to our knowledge of the clinical picture of lead poisoning. However, as a result of clinical research, considerable valuable data are available on the action of lead upon body tissues and therapeutic methods for the treatment of plumbism.

In recent years the subject of lead poisoning has been studied principally from an industrial standpoint, and much knowledge has been contributed to safeguard workers and decrease the incidence of this disease. Often cases of lead poisoning are found, however, in small children who have chewed on lead painted surfaces or have eaten flakes of lead-based paints. From 1929 to 1935 in England and in 1934 in Massachusetts there were cases of lead

poisoning reported which were caused by drinking water which had stood in lead pipes leading from the main into the residences. Another non-industrial source of lead poisoning is the burning, by low income groups, of discarded storage battery cases for fuel. An unusual, though not entirely non-industrial, lead exposure has been reported in shooting galleries, and cases of lead intoxication have resulted. By far the greatest number of cases of plumbism result from exposure in industry. Lead and its salts are used in a large number of occupations, but the most hazardous are those in which lead dusts or fumes contaminate the workroom. The U. S. Department of Labor lists well over 150 occupations which present a lead exposure. Thus is the widespread prevalence of lead poisoning indicated. Smelting, refining, and burning, and processes where scrap is melted, offer the greatest hazard. Other dangerous sources of lead poisoning are in the use of litharge, in making and applying glaze for pottery and tile, in the manufacture of batteries, and in the making of varnish. Enameling of bathtubs, stoves, sinks and fixtures should also be mentioned. Many new industries are always being developed and new uses for lead being found. Therefore, the details of a patient's exposure to lead should be investigated where the symptoms of lead poisoning are found.

Lead enters the body through the respiratory tract, through inhalation of vapors, fumes, dust or mists, and by way of the gastro-enteric tract, through the swallowing of lead compounds trapped in the upper respiratory tract, or introduced into the mouth on food, tobacco, fingers, or other objects. In some instances certain organic lead compounds, such as tetraethyl lead, penetrate the skin and thus enter the body. This last mode of entrance is not of great significance in industry. Most cases of plumbism are caused by inhalation. Some authorities claim that two milligrams absorbed in this manner daily will cause chronic lead poisoning. However, in the case of such a cumulative poison and in view of the marked differences in susceptibility, due in part to variations in diet, fatigue, alcoholism and infections, a given minimum is questionable. Larger amounts can be absorbed without disease and smaller amounts may produce symptoms and signs in individuals whose hygiene is defective.

It is important to distinguish between those evidences which point to absorption of lead and those which mean poisoning. Poisoning is disability of such a nature that the subject is in distress, cannot enjoy his usual activities, and is handicapped or prevented entirely from working. The presence of the lead line on the gums, stippling of the red blood cells, or the presence of relatively large amounts of lead in the blood, urine, or excreta is not, in itself, sufficient evidence to justify a diagnosis of lead poisoning. These findings do, however, indicate lead absorption. Poisoning is present only when the subject has colic, palsy, encephalopathy, or is anemic due to lead absorption. This distinction between absorption and poisoning is of considerable legal significance in view of the importance of compensation. Most authorities agree that, in order to prove poisoning, a real incapacity or illness must be due in great part or entirely to lead. This latter point should generally be proved by determining that the subject has been exposed to significant amounts of lead or its compounds and that absorption has taken place as revealed by examination of blood, urine, or excreta, or by the presence of a lead line on the gums.

Some of the characteristic symptoms of acute lead poisoning may be: The affected person has a dry throat, and a sweet, then metallic, astringent taste in the mouth. Then, within a half hour an intense burning, abdominal pain and vomiting take place, followed by diarrhea, rarely by constipation. The stools are black, from lead sulfide, and urine is scanty, with albumin and casts. The breath is foul and the tongue coated, and headaches are usually present. Pain and cramps in the legs, with numbness and local palsies, appear within a few hours. In the case of inhalation of lead from the volatilization of a lead compound, as from the burning of a battery, encephalopathy may develop. There may be convulsions, followed by stupor, and the patient may be unconscious when first seen by the physician. In some cases of acute poisoning the symptoms may resemble, after twenty-four hours, a condition seen in chronic lead poisoning: colic, constipation, anemia, slight weakness of the extensor muscles, and mild cerebral symptoms, all of which, under appropriate treatment, are completely curable, not causing permanent disability.

Some of the symptoms of chronic lead poi-



soning may be: The patient becomes tired easily, has headaches, loss of appetite, nausea and colic, and has an ashen, slate-gray color of the complexion. Lead line on the gums, stippling of the red blood cells, and secondary anemia, loss of appetite and vomiting of solid foods, headaches, dizziness, and insomnia are only a few of the symptoms of chronic lead poisoning. A tremor of the eyelids and tongue, and a coarse tremor of the fingers, may be noticed. In some cases (less than half) a basophilic degeneration of the erythrocytes will be found. Colic, joint pains, twitching, paralysis, constipation, anemia, and slight weakness of extensor muscles are other symptoms. Lead poisoning appears more rapidly and intensely by the inspiration of lead-laden air than by the gastro-intestinal route. Much of the lead that enters the gastro-intestinal tract is not absorbed into the organism, but is either eliminated directly or never passes beyond the liver. The lead passes from the liver into the intestinal tract by way of the bile.

A significant amount of progress has been made in recent years toward the prevention of lead poisoning in industry. This progress has been achieved in part by the substitution of harmless compounds for the lead-containing ones, by the design, installation, and maintenance of proper exhaust ventilation equipment to control exposure to lead, and by the use of approved respirators so that a minimum amount of these toxic lead compounds are breathed by the individuals concerned. The insistence by responsible persons that individual hygienic measures in the form of clean wash rooms, changes of working clothes, and periodic medical examination be instituted and carried out has also contributed to the reduction of the incidence of lead poisoning.

Even with the best and most diligent precautions it is impossible to prevent a certain amount of lead poisoning where an exposure exists. Therefore, it can be assumed that after a workman has been exposed for several years he may have stored considerable quantities of lead in his body. There is then the possibility that an illness producing a marked acidosis in such an individual may cause the stored lead to be released with very toxic symptoms. In many American industries it has been demonstrated, however, that disability due to lead exposure can be prevented by constant medical and engineering supervision of such industries.

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

## PROVISIONAL BIRTH AND DEATH STATISTICS FOR JULY 1952, AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                       | Number<br>Registered<br>During<br>July 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|---|---|-------|---------|--------------------------|-------|-------|
|   | Total                                       | White | Colored | 1952                     | 1951  | 1950  |
| Total live births   | 7407  |       |         | 28.2                     | 27.2  | 26.7  |
| Total stillbirths   | 187   |       |         | 24.6                     | 23.1  | 24.2  |
| Deaths, stillbirths<br>excluded   | 2391  | 1378  | 1013    | 9.0                      | 8.5   | 7.6   |
| Infant deaths:  |   |       |         |                          |       |       |
| under one year  | 253   | 124   | 129     | 34.2                     | 36.2  | 30.6  |
| under one month   | 170   | 98    | 72      | 23.0                     | 24.7  | 22.4  |
| Cause of Death  |   |       |         |                          |       |       |
| Tuberculosis, 001-019   | 37  | 16    | 21      | 13.9                     | 24.7  | 23.8  |
| Syphilis, 020-029   | 7   | 1     | 6       | 2.6                      | 4.9   | 4.6   |
| Typhoid and paratyphoid, 040, 041                                       | 1   |       | 1       | 0.4                      |       | 0.4   |
| Dysentery, 045-048  | 3   | 1     | 2       | 1.1                      | 2.7   | 3.1   |
| Diphtheria, 055   | 1   |       | 1       | 0.4                      |       | 0.8   |
| Whooping cough, 056   |   |       |         |                          | 1.5   | 3.1   |
| Meningococcal infections, 057   | 3   | 3     |         | 1.1                      | 0.8   | 0.8   |
| Poliomyelitis, 080, 081   | 5   | 5     |         | 1.9                      | 3.4   | 1.9   |
| Encephalitis, 082, 083  | 4   | 3     | 1       | 1.5                      | 0.8   | 0.4   |
| Measles, 085  | 1   | 1     |         | 0.4                      | 0.8   |       |
| Malaria, 110-117  | 1   |       | 1       | 0.4                      |       |       |
| Malignant neoplasms, 140-205  | 284   | 180   | 104     | 106.9                    | 98.7  | 83.2  |
| Diabetes mellitus, 260  | 34  | 23    | 11      | 12.8                     | 11.0  | 6.9   |
| Pellagra, 281   | 4   | 3     | 1       | 1.5                      | 0.4   | 0.4   |
| Vascular lesions of central nervous system, 330-334                     | 295   | 158   | 137     | 111.0                    | 96.0  | 83.6  |
| Other diseases of nervous system, 300-318, 340-398                      | 39  | 24    | 15      | 14.7                     | 13.7  | 10.4  |
| Rheumatic fever, 400-402  | 6   | 3     | 3       | 2.3                      | 1.1   | 2.3   |
| Diseases of the heart, 410-443  | 684   | 430   | 254     | 257.4                    | 242.8 | 232.5 |
| Diseases of the arteries, 450-456                                       | 45  | 30    | 15      | 16.9                     | 12.9  | 10.7  |
| Other diseases of the circulatory system, 444-447, 460-468              | 46  | 21    | 25      | 17.3                     | 17.1  | 11.9  |
| Influenza, 480-489  | 6   | 2     | 4       | 2.3                      | 0.4   | 2.3   |
| Pneumonia, 490-493  | 63  | 39    | 24      | 23.7                     | 22.4  | 20.7  |
| Bronchitis, 500-502   | 4   | 3     | 1       | 1.5                      | 0.4   | 0.4   |
| Appendicitis, 550-553   | 4   | 3     | 1       | 1.5                      | 3.0   | 2.3   |
| Intestinal obstruction and hernia, 560, 561, 570                        | 14  | 8     | 6       | 5.3                      | 6.1   | 7.7   |
| Gastro-enteritis and colitis (under 2) 571.0, 764                       | 36  | 11    | 25      | 13.5                     | 7.6   | 5.0   |
| Cirrhosis of liver, 581   | 9   | 8     | 1       | 3.4                      | 5.3   | 3.4   |
| Diseases of pregnancy and childbirth, 640-689                           | 17  | 4     | 13      | 22.4                     | 9.6   | 21.0  |
| Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684 | 3   |       | 3       | 4.0                      | 2.7   | 7.0   |
| Congenital malformations, 750-759                                       | 39  | 31    | 8       | 5.3                      | 3.6   | 3.3   |
| Accidental deaths, total, 800-962                                       | 192   | 122   | 70      | 72.3                     | 58.4  | 59.8  |
| Motor vehicle accidents, 810-835, 960                                   | 73  | 47    | 26      | 27.5                     | 25.8  | 29.5  |
| All other defined causes  | 378   | 203   | 175     | 142.3                    | 163.2 | 131.2 |
| Ill-defined and unknown causes, 780-793, 795                            | 129   | 42    | 87      | 48.6                     | 39.5  | 35.7  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon July report of the years specified.

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## AMERICAN MEDICAL ASSOCIATION NEWS

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### PERIODIC PHYSICAL EXAMINATION HELPS KEEP INDIVIDUAL HEALTHY

An ounce of prevention through a periodic physical check-up is better than a pound of cure, and is the best way to sound health and peace of mind.

Preventive medicine offers the best means of adding years to life and life to years, Dr. Lewis J. Burch, of Mt. Pleasant, Mich., wrote in the current *Today's Health*, published by the American Medical Association.

Immunization is accepted almost universally and has proved successful as preventive medicine; the periodic health examination is another such effective weapon for safeguarding health, he stated, adding:

"Most of us get used to feeling the way we feel each day. We carelessly disregard those little danger signals that warn of impending trouble. Or we dose ourselves with all kinds of nostrums in an effort to cure or mask the symptoms that annoy us. Sometimes, too late, we find that the little danger has become a big danger."

Physical check-ups, according to Dr. Burch, should be obtained by those between the ages of 15 and 35 years every two years, by those 35 to 60 annually, and by those over 60 every six months. However, some individuals may require more frequent examinations, which can be determined by a physician.

Many diseases, such as cancer, tuberculosis and those of the heart, blood vessels and kidneys, would not cause so many deaths in early life if they were diagnosed and treated in the initial stages, Dr. Burch pointed out. One doctor has estimated that each year thousands of Americans would have lived longer if they had known they needed help, or had sought it in time, he added.

The basic physical examination, Dr. Burch stated, should include the entire body: all body openings, the pelvic region, abdomen, breasts, chest, heart, skin, joints, muscles, nerve reactions and blood pressure. Basic laboratory tests that should be made include a urinalysis, blood count, stained smears, and serologic tests for syphilis.

### DESCRIBES NEW PROCEDURE TO CORRECT CHEST DEFORMITY

A new surgical procedure to correct funnel chest deformity by the use of rib grafts was described in the November 22 *Journal of the American Medical Association*.

This operation was performed for the first time on a 13-year-old girl more than four years ago, according to Dr. James E. Dailey, Houston, Texas, who developed the technique. A follow-up study of the case has shown that the graft has remained completely fused and is functioning properly, with no shrinkage or loss of structure. In addition, physiological disturbances resulting from the deformity have been corrected.

Under the new procedure, the ninth rib on the right side of the patient is removed and the wound closed. A chest incision is then made, the breastbone elevated to normal position, and the rib placed beneath the breastbone to support it. The rib graft is anchored to the second rib on the right side and the third rib on the left side by means of encircling wires. The incision is closed.

The success of this technique, Dr. Dailey stated, might suggest use of such a graft in other orthopedic or plastic procedures where bridging a gap is necessary. Although the graft was accomplished by removing and using a rib from the patient, Dr. Dailey added that such a graft may be possible by using a rib from a bone bank.

Patients with funnel chest deformities are divided into two groups: those less than 24 months of age who require a simple operative procedure, and those patients older than 24 months, in whom the deformity is fixed and a more extensive procedure necessary. The new technique is applicable to the latter group.

Correction of such a deformity is necessary, Dr. Dailey pointed out, to correct heart and respiratory symptoms, and psychological complaints.

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### LOOK INTO THAT PERSISTENT MOUTH SORE—IT MAY BE CANCER

If you have a sore in your mouth that has persisted for three or four weeks, see your physician. It may be cancer.



Cancer within the mouth accounts for approximately eight per cent of all human malignant diseases, according to Dr. James W. Hendrick, San Antonio, and Dr. Grant E. Ward, Baltimore. The greatest incidence of such cancers is between the ages of 50 and 60 years, with men being affected five times as often as women.

Because of their accessibility, such cancers should be diagnosed early and adequate treatment instituted, the doctors wrote in the November 15 Journal of the American Medical Association. However, the larger percentage, when seen by the tumor specialist, are advanced cases.

Because cancers within the mouth frequently spread to other parts of the body, it is essential not only to eradicate the primary lesion, but also to eradicate the involved lymph nodes, which transmit the cancer to other parts of the body, the doctors pointed out.

Microscopic examination of a specimen of the intraoral lesion should be made when persistent sores prevail, they stated. The choice of treatment depends upon the location of the tumor, its size, its extent, the type, the age and general physical condition of the patient, and the lymph node involvement.

These cancers may be treated with irradiation, electrosurgery, surgery, or a combination of these methods, in the opinion of the doctors, who added:

"Recent advances in anesthesia, operative technique, the free use of antibiotics, intranasal feeding during intensive preoperative x-ray therapy and postoperative convalescence, blood from a blood bank, and an accurate control of fluid balance all permit extensive operative procedures in the head and neck region to be carried out with very commendable results, rapid convalescence, and minimum mortality and morbidity."

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#### **REPORT ENZYME HELPS PREVENT KIDNEY STONES**

Hyaluronidase mixed with isotonic sodium chloride solution has aided in the prevention of kidney stones, it was reported in the November 15 Journal of the American Medical Association.

A study of 24 persons in whom kidney stones previously formed at a rapid rate showed that injections of the drug under

the skin every 24 to 48 hours prevented the formation of new kidney stones and prevented further growth of existing stones in 19 cases (79 per cent), according to the article. In four patients (16.6 per cent), the size of the existing stones became smaller and less dense.

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#### **CIGARETTE SMOKING MAY BE FACTOR IN HEART AND BLOOD VESSEL DISEASES**

Cigarette smoking may be a contributing factor in heart and blood vessel diseases. Further intensive investigation on the relationship of cigarette smoking to such diseases was urged in an editorial in the November 8 Journal of the American Medical Association.

"Although it may be generally concluded that cigarette smoking is most likely a contributory factor and not primarily an etiological one in the production of cardiovascular disease, the present state of medical knowledge clearly points up the need for intensive investigation on the relation of cigarette smoking to cardiovascular disease," it stated.

"Since the smoking habit is so widespread, physicians should pay more attention medically and pharmacologically to a nicotine-containing agent that is used by the public in amounts equal to, if not greater than, any other drug."

The large majority of normal persons respond to cigarette smoking with a definite decrease in the flow of blood to the extremities and surface of the body which lasts from a few minutes to a half-hour or more, the editorial pointed out. In normal persons, smoking causes a rise in blood pressure, an increase in the pulse rate between five and 20 beats per minute, and simultaneous constriction of the blood vessels of the extremities, as measured by a decrease in skin temperature. There is, however, a considerable individual variation in the physiological response to cigarette smoking, it added.

While there is a difference of opinion concerning the precise role and the possible injurious effects of cigarette smoking on the heart and blood vessels, there is some evidence to suggest that smoking occasionally produces a pain over the heart similar to angina pectoris.

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## MANAGEMENT OF CONGESTIVE HEART FAILURE REFRACTORY TO USUAL TREATMENT

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Since the majority of patients with heart disease terminate in congestive heart failure, the management of such patients is of paramount importance. The heart fails, either because it is incapable of performing its usual amount of work, or because it is given too much work to do. All therapeutic procedures are, therefore, based on improving cardiac efficiency and decreasing cardiac load.

In reviewing the etiologic aspects of refractory heart failure, we find two common errors: (1) Misdiagnosis, by failure to recognize associated disease states; and (2) suboptimal use of the direct treatment of congestive failure.

Shortness of breath and extravascular accumulations of fluid in the individual with heart disease are so commonly due to non-cardiac illnesses that a diagnosis of heart failure should not be taken for granted. Once such a diagnosis is established the physician should attempt to answer at least three questions: (1) What precipitated failure? (2) What associated disease states are present? (3) What treatment has been used?

Failure to recognize precipitating factors is the fault many times when the patient does not respond to what is seemingly optimal treatment for the heart and, in fact, he may be disastrously harmed by treatment. For instance, failure to recognize precipitating factors, such as infections of the urinary tract, may not only render cardiac therapy ineffective but diuretics, which are otherwise indicated, are dangerous.

From the Gibson Clinic.

Read before the Southeastern Division of the Association, Dothan, January 31, 1952.

Unrecognized or associated diseases such as thyrotoxicosis, myxedema, anemia, beriberi, cirrhosis, prostatism or any obstructive uropathy, pericardial or pulmonary vascular disease may likewise interfere with restoration of cardiac compensation by specific cardiac therapy. Some of these diseases, such as beriberi or anemia, may be the sole cause of heart failure and they respond only to non-cardiac therapy. Persistent refractory dyspnea may be due to pleural effusion, the physical signs of which are much more deceptive than equivalent amounts of fluid due to primary pulmonary disease. Perhaps this difference is due to the additive effect of the physical findings of the underlying lung disease. Respiratory symptoms due to allergy will not respond to cardiac therapy. Many instances of so-called cardiac asthma are cases of bronchial asthma in individuals with cardiac disease.

Only through this multilateral approach can we evaluate what is necessary for effective treatment and evaluate prognosis. For all these reasons an individual, presumably in refractive heart failure, requires a thorough physical examination, including chest x-ray, and the entire therapy must be reviewed with respect to its adequacy, toxicity and unavoidable side effects. One must constantly consider the possibility of co-existing disease to treat cardiovascular disease competently.

In considering whether or not optimal treatment has been used in any given case, one must consider that the direct treatment of congestive heart failure consists of (1) increasing cardiac efficiency, and (2) decreasing cardiac load. In a few rare instances one of these methods alone may suf-



fice to restore cardiac compensation, but in the vast majority of instances both methods must be used simultaneously. Refractory heart failure may be due to suboptimal use of either or both of these methods.

As mentioned in the beginning, cardiac efficiency must be improved. This improvement we seek to accomplish with the use of drugs, the most effective of which is digitalis. In refractory heart failure the dose of the drug which the patient has been getting should be reviewed very critically. It is well known that there is no single digitalization or single maintenance dose. Nor is there any rule of thumb to gauge adequate digitalization except by the dissipation of congestive heart failure. Withering's advice should be followed; namely, the dose should be increased gradually until the first symptoms or signs of toxicity appear or until one is certain that increasing failure is being produced. There are two major exceptions to this rule, these being acute inflammatory and acute necrotic lesions of the myocardium. In these two instances one should be satisfied with the average maintenance and digitalization doses, because of the increased irritability of the myocardium and consequent potentiality of sudden death.

Overdigitalization can lead to refractory heart failure. In addition to the usual symptoms and signs of overdigitalization one should be suspicious of digitalis intoxication in an individual who is on a greater than average maintenance dose and is developing increasing congestive heart failure with no other apparent cause.

Quinidine is often quite valuable in increasing cardiac efficiency through the control of auricular fibrillation, with a rapid ventricular rate, not previously controlled by digitalis. It is also of value when there are multiple premature beats not caused by or abolished by digitalis, if these beats are thought to contribute to wasteful expenditure of much needed cardiac work.

Oxygen should be used to increase cardiac efficiency when there is any indication of interference with respiratory exchange of gases or when precordial or substernal pain is present. The varying methods of administering oxygen should be individualized to a given case.

Vasodilators, such as papaverine, are difficult to evaluate in this type of therapy but should be used for whatever good effect they

may have. Papaverine also has a sedative action which may be of great help.

In considering the problem of decreasing the cardiac load, we first of all must ask the heart to do less work by allowing more physical and mental rest. This, however, should not be carried to the extreme of complete bedrest because of the well known dangers associated therewith.

Rapid methods of decreasing cardiac load consist of, first, the restriction of sodium, which is frequently mishandled by the well-meaning wife who cannot stand to see her husband eating without salt; and, secondly, the assurance of an adequate water intake which is essential for the kidneys to excrete the load imposed upon them. If sufficient water is not given the patient there may develop hypertonic dehydration of the blood, characterized by rising blood urea nitrogen, sodium, and chloride. Uncorrected hypertonic dehydration also promotes refractory heart failure.

Mercurial diuretics are the most powerful sodium eliminating drugs known. Refractory heart failure is frequently due to the inadequate use of these drugs. Many physicians do a good job of digitalization, but very often, through failure to restrict sodium intake and to provide continued sodium diuresis with interval injections of a mercurial diuretic, see the patients sink back into deep congestive heart failure. This, I believe, is the most common error seen in the management of the failing heart. The control of heart failure must be through continuous therapy, keeping the patient as near his "dry" weight as possible at all times. The mercurial diuretics are quite safe and are contraindicated only in acute inflammatory renal lesions and those patients who have shown or are known to be sensitive to mercury. They may be used daily as long as the kidneys respond adequately. Adequate response is regarded as an output of 2500 cc. of urine or a loss of two or more pounds per day. Occasionally the kidneys may not respond at first. The drug may be repeated, provided there are no toxic or undesirable side effects. Toxic effects are recognized by a rapidly rising blood urea nitrogen, oliguria, lethargy, nausea and vomiting. Patients developing the lower nephron syndrome may be saved by heroic use of hypertonic saline. This syndrome may develop if the drug is used in the presence of the acute inflammatory nephritides or if it is used fre-

quently in the face of a diminishing response of the kidneys.

A further aid in the treatment of refractory heart failure by decreasing cardiac load consists of the use of ammonium chloride which serves a twofold purpose: (1) preventing hypochloremic alkalosis, sometimes seen when mercurials produce a rapid drop in blood chlorides without at first affecting the blood sodium, and (2) this acid salt stimulates the kidney to excrete base, thereby increasing the diuresis by approximately 20%.

The cation exchange resins have recently become popularized and may be used to great advantage in many cases. As you know, these resins exchange their hydrogen ions for cations of the diet. Their chief advantage consists in permitting a higher sodium content of the diet which is, therefore, more palatable, but their usefulness is also limited by their inability to differentiate sodium from potassium, calcium and magnesium.

In conclusion, let me emphasize once more that many of our cases of refractory heart failure are merely cases inadequately treated or ones in which there is an unrecognized associated disease present. Sometimes, though rarely, refractory failure is due to overtreatment. Regardless of etiology, by careful search for extracardiac factors and the critical analysis of the treatment being used as to dosage, toxicity and undesirable side effects, most cases can be improved to live a more comfortable and useful life. In about one-half of the cases the physician is at fault through failure to provide adequate or optimal treatment.

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**Salivary Gland Tumors**—When the physician is confronted by a patient with a swelling in the salivary gland region, he must first determine whether the swelling is a neoplasm. If he can exclude calculus, infection and trauma, the swelling unquestionably is neoplastic in origin.

Having concluded that there is a neoplasm, one must ascertain whether the tumor is primary or secondary. This can be accomplished only by a complete history and careful examination, special attention being directed to the scalp, external auditory canal, pharynx, and oral cavity. Lymphatic spread of cancer from these sites is to the lymph nodes adjacent to the major salivary gland. In rare instances a biopsy may be necessary to make the differentiation.

When the tumor is classified as a primary tumor of salivary gland origin, it is desirable to determine whether it is benign or malignant. This is the most difficult part of the diagnosis. As has been stated earlier in this discussion, sex, age, duration of disease, and the size of the tumor are of little assistance. Rapidity of growth and pain are slightly more common in cancer than in benign tumors. The only significant characteristic which we have encountered in malignancies of salivary gland origin is fixation. Its absence does not exclude cancer, but its presence makes the diagnosis of cancer most likely. We have never seen fixation in a primary untreated benign salivary gland tumor.

When ulceration is present we recommend an adequate biopsy from the ulcerated area, but a formal biopsy is not recommended on non-ulcerative lesions. In the absence of ulceration, adequate biopsy material may be obtained by aspiration. Not only can solid material be secured for study, but fluids, if present, can also be obtained and cultured for tuberculosis, fungi, and the pyogens. Care must be taken to insert the aspirating needle only through skin that will be sacrificed at surgery.

The presence of regional lymph node enlargement suggests a primary malignant tumor, though the lymphadenopathy is usually due to infection of the tumor or skin. Metastatic tumor if present must be taken into consideration in planning definitive therapy.—*Prose et al., J. Tennessee M. A., November 1952.*

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## CARCINOMA OF THE COLON INVOLVING THE ABDOMINAL WALL AND OTHER VISCERA

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### INTRODUCTION

In our attempts to cure cancer today, it is well recognized that the most worth-while approach is that of early diagnosis. Nevertheless, late cases of cancer continue to form a considerable proportion of those treated. These cases are today approached with more temerity by the surgeon who has blood, antibiotics, and other adjuncts at his disposal; and few cases are relegated into that hopeless category of the inoperable. One feels that, with few exceptions, all patients deserve at least an exploration. However, the term, non-resectable, is one that must be applied not infrequently, even today, by the judicious cancer surgeon after he has entered the abdomen lest the operative risk or the deformity resulting from resection be greater than is warranted by the amount of palliation or cure that may be expected. It is the purpose of this paper to present briefly three cases of colon cancer, at least one of which might well have been considered inoperable and all three of which might have been called unresectable.

### CASE REPORTS

1. Mrs. G. G. (U. H. No. 823631): This 64 year old white woman was admitted to the University of Minnesota Hospitals on 9-23-50. She gave a history of having had vomiting and abdominal pain in May 1950, which had been treated by drainage of a large inflammatory mass in the descending colon. No malignancy was noted on biopsy. In June 1950, a transverse colostomy had been performed due to obstructive symptoms, and an x-ray taken August 1950 had shown a questionable malignancy in the left colon.

On admission to the University Hospitals she presented a severe anemia; a functioning transverse colostomy; a firm, tender, fixed, left lower quadrant mass measuring 14 x 10 cm.; and a draining sinus near the umbilicus.

After adequate preoperative preparation, she was explored on 9-27-50. There was a large, ulcerating, carcinomatous mass (in the mid-descending colon) which was densely adherent to and apparently invading both the abdominal wall in the left flank and a loop of small bowel. There were no grossly

involved lymph nodes and the liver appeared free of metastases. The tumor mass was excised en bloc, the specimen including colon from the mid-transverse colon to the pelvic brim, 29 cm. of small bowel, a considerable portion of the rectus abdominis, transversus abdominis, and internal oblique muscles on the left, and all the lymphatic tissues over the aorta and vena cava, the inferior mesenteric artery being severed at its origin. Large and small bowel continuity was reestablished by end to end anastomoses and the abdominal incision was closed in layers. The defect in the abdominal wall musculature was supported by a firm pressure dressing.

Pathological examination revealed an adenocarcinoma of the colon, with extension into the mesentery and into the rectus muscle. There were no metastases in 35 lymph nodes and the line of excision was adequately around the tumor at all points.

She was last seen on 7-20-51 at which time her abdominal wall was firm, she was asymptomatic, and there was no evidence of recurrence. A letter from her physician dated 10-6-52 revealed that she was in "excellent condition," and that there was no evidence of recurrence.

2. Mrs. N. D. (U. H. No. 824102): This 64 year old white woman was admitted to the University of Minnesota Hospitals on 9-27-50. She gave a history of having developed a left lower quadrant mass in March 1950. A barium enema had revealed a colon tumor and she had been explored on 3-23-50. An abscess in the right gutter had been found and drained, a diagnosis of diverticulitis having been made. Drainage continued for 5 months, at which point a biopsy of the drainage tract had revealed adenocarcinoma.

On admission to the University Hospitals she appeared as a pale, chronically ill, elderly female with a severe anemia, and a large, fixed, left lower quadrant mass over which was draining a fecal fistula.

After adequate preparation she was explored on 10-6-50. There was a carcinomatous mass in the left flank involving the left colon, the internal oblique and transversus

abdominis muscles, the psoas fascia posteriorly, and four loops of small bowel. There were no evident lymphatic or hepatic metastases.

An en bloc excision was made of the colon (mid-transverse to rectosigmoid), 67 cm. of small bowel, the psoas fascia on the left with all lymph bearing tissues anterior to the great vessels, the fecal fistula with its surrounding abdominal wall, and a considerable portion of the transversus abdominis and internal oblique muscles. The fecal stream was reconstituted by two small intestinal anastomoses and an anastomosis of the transverse colon to the rectosigmoid.

Pathological examination revealed an adenocarcinoma which was growing along the tract of the fecal fistula, but which did not apparently invade the excised muscles or small bowel, the latter being included in a dense chronic inflammatory reaction. No metastases were noted on careful examination of the excised lymph nodes.

The postoperative course was essentially uneventful, the patient being discharged on the tenth postoperative day. She returned to the hospital six months later, asymptomatic. On 4-30-51, a so-called "second look" exploration was done. Thorough examination of the abdominal cavity revealed no evidence of recurrent tumor.

On 8-25-52, she was last seen, at which time she was gaining weight and was asymptomatic.

3. Mrs. E. S.: This 54 year old white woman was first seen in the Oak Park Tumor Clinic on 7-23-52. She gave a three-year history of left abdominal pain, intermittent rectal bleeding, and weight loss of unknown degree.

On physical examination she appeared severely and chronically ill, with a firm, tender mass in the left upper quadrant extending from the costal margin to the umbilicus. She was admitted to the hospital and, while she was being prepared for operation, the mass grew rapidly over several days, ultimately extending to the iliac crest. On August 1, 1952 she was explored through a left subcostal incision. There was a large fungating carcinoma of the splenic flexure of the colon which had perforated onto the abdominal wall causing extensive necrosis and abscess formation, with the stomach, greater omentum, colon, and abdominal wall being involved in one mass.

The peritoneal cavity was entered medial to the tumor mass, but with our first efforts at dissection a thin-walled abscess was entered, with spillage of several hundred cubic centimeters of pus. For this reason no definitive procedure was attempted. Only enough colon, omentum, and part of the greater curvature of the stomach was removed to permit excision of the mass. The necrotic inner layers of the abdominal wall onto which the tumor had perforated were debrided and the two severed ends of the colon were brought out through the lateral end of the incision.

Pathological examination (Dr. J. A. Cunningham) revealed an adenocarcinoma of the colon which was growing almost entirely extraluminally and which had perforated and was invading the surrounding tissues with much necrosis and abscess formation.

Recovery from this operation was uneventful although pus continued to drain about the exteriorized bowel for several days. The patient was discharged from the hospital on August 17, 1952, at which time drainage had ceased and the colostomy was functioning well.

On September 6, 1952 the patient was reoperated upon. At this time all inflammation had subsided and the abdomen was relatively free of adhesions. There were no grossly involved lymph nodes and no evident liver metastases. All adherent and questionably involved tissues were resected en bloc. These consisted of the greater portion of the transverse and descending colons with their mesenteries, another segment of adherent stomach, and all of the abdominal wall about the previous colostomy and the previous abscess. The transverse colon was anastomosed to the sigmoid, and the abdominal incisions were closed in one layer. The site of the previous colostomy presented a considerable muscular defect and at this point, over a 10 cm. diameter area, the abdominal wall consisted only of skin and subcutaneous fat. This defect was splinted with a pressure dressing over a stint of wet cotton.

Pathological examination revealed all lines of excision to be through healthy tissues, and multiple sections revealed no neoplastic tissue in the abdominal wall or in the excised lymph nodes.

The postoperative course was essentially uneventful and the patient was discharged



from the hospital on 9-15-52. On 10-11-52, a report from her private physician revealed that she was doing well.

#### DISCUSSION

All three of these patients presented a large, formidable tumor mass with involvement of the abdominal wall musculature and of other viscera, and one case had a carcinomatous sinus to the abdominal wall skin. Yet they presented a distinct clinical entity with the following characteristics: (1) They were far enough from the anus to allow preservation of the normal fecal outlet, a *sine qua non* of good palliation in colon surgery. (2) The carcinomas, although growing rapidly as locally invasive, extramural tumors, nonetheless were slow to metastasize by way of the lymph or blood stream, thus making complete en bloc excision quite feasible. Indeed, once the latter has been accomplished, such cases would seem to offer a better chance for cure than does a smaller cancer with lymph node involvement.

Obviously a follow-up period of 24 months, 22 months, and 1 month respectively is too short a time to warrant any enthusiastic commitments regarding cure. However, the excellent palliation from an intolerable situation received by all three patients would alone be sufficient indication for operation. Unfortunately, the literature offers no large series of similar cases treated five or more years before publication. However, that material which is available appears to confirm the fact that such procedures are worth while.

Sugarbaker<sup>1</sup> described four cases of colon cancer involving the abdominal wall, but not requiring resection of other viscera. There was one postoperative death and one death at 23 months. The other two cases were living and well at 24 and 28 months respectively.

Brunschwig<sup>1</sup> reported four similar cases, two of which involved other viscera as well as the abdominal wall. There was one postoperative death. Three patients were living at 5 months, 29 months, and 53 months respectively.

Gilchrist and David<sup>2</sup> reported four cases of colon cancer involving the abdominal wall but not requiring resection of other viscera. One had died of liver metastases, the other three being alive and well at from three to five years.

Merrill et al.<sup>3</sup> collected 30 cases from the Mayo Clinic which involved the abdominal wall but no other organs. Three (10%) had died postoperatively and thirteen others had died in an average of 18.5 months. Three patients had been last seen alive with recurrent disease, and eleven patients (36.6%) were alive and well at from 28 months to 10½ years.

No attempt has been made in the present paper to describe surgical technique in detail. However, one point may be emphasized: excision must be through completely healthy tissues at all points. Any structure which is densely adherent to the tumor must be sacrificed if one is to hope for a cure. The failure of the pathologist to find tumor invasion in the adjacent excised organs is no indication that the excision has been needlessly radical. Microscopic, individual cancer cells may still be present but unrecognized. It is significant that of the 30 cases reported by Merrill et al.<sup>3</sup> carcinoma recurred in the abdominal wall in ten (33%) and it recurred there in five of the eighteen cases in which no cancer was found in the excised segment of the abdominal wall.

The fact remains, however, that all of these cases would have been more susceptible to cure if they had been diagnosed and operated upon sooner. It should be emphasized, as seen in the history of the first two cases above, that the diagnosis of diverticulitis must always be regarded with suspicion and that carcinoma must be *definitely* ruled out.

Our first patient, (G. G.), had been under a physician's care for 4 months and had had two operations without having been diagnosed correctly. The second patient, (N. D.), had been under a doctor's care for 6 months and had been operated on once without having her cancer diagnosed. In both cases, cancer was considered by the doctors but their index of suspicion was not sufficiently high to insist upon ruling it out.

In such cases it is probable that an early diagnosis could only be made by resection of the colon. Therefore, the writer suggests that, when the diagnosis of diverticulitis is entertained, and when there is a persistent mass or a persistent sinus or a persistent stricture (symptomatically or by x-ray), one should dispense rapidly with conservative treatment and resect the involved bowel. The mortality from such a procedure

is extremely low today, and, since diverticulitis rarely if ever involves the rectum proper, the latter can always be preserved if the process is benign.

#### SUMMARY

Three cases of colon cancer have been described which were so characterized in manner of growth and location that resection was feasible and worth while, in spite of the extensiveness of the lesions.

The necessity for completely ruling out malignancy in any "inflammatory" colon lesion has been pointed out.

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3. Merrill, Joseph G.; Dockerty, Malcolm B., and Waugh, John M.: Carcinoma of the Colon Perforating onto the Anterior Abdominal Wall, *Surgery* 28: 662-671, 1950.

4. Sugarbaker, Everett D.: Coincident Removal of Additional Structures in Resections for Carcinoma of the Colon and Rectum, *Ann. Surg.* 123: 1036-1046, 1946.

## SURGICAL MANAGEMENT OF GASTRIC AND DUODENAL ULCERS

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The subject of this discussion has probably caused more dissension and argument among surgeons than any other topic. It is for this reason that it is presented here. Undoubtedly there are those who do not agree with the views which are presented, but I feel they are in accord with the thinking of the majority of surgeons throughout the country.

#### GASTRIC ULCER

In order to discuss peptic ulcer adequately it is necessary to break this classification down into gastric and duodenal ulcers. The reason for so doing is that the management of the two varies considerably. Gastric ulcer has always been viewed with suspicion, due to the distinct possibility that it might be malignant. The previously accepted management was one of placing the patient on a medical regimen for a two or three week period, then repeating the x-ray examination to see if the ulcer had healed. If healing had occurred, it was considered benign. This viewpoint has largely been replaced by that which advocates the resection of all gastric ulcers.

The argument in favor of this is that ulcerated gastric carcinomas are known to show healing by x-ray. If this occurred under the older management, the patient would be followed by observation while his cancer continued to grow. These arguments

have been well presented by Grimes and Bell,<sup>1</sup> who reported that twenty per cent of gastric ulcers were malignant in two series of cases. Fifty four per cent of the malignant lesions were on the lesser curvature and seventy nine per cent were accompanied by free acid. The incidence of malignancy reported above fits in with generally accepted figures, in which ten to twenty per cent of gastric ulcers are malignant. This is considerably higher than the overall mortality rate of subtotal gastric resection, which is about five per cent in reputable hands. One other argument favoring resection, as opposed to medical management, is that the accepted figure for the long term cure rate of gastric ulcers treated medically is only about fifty per cent.<sup>2,3</sup> When the percentages of those gastric ulcers which are malignant and those not cured medically are added together, they far outweigh the disadvantages of subtotal gastric resection.

There may be some question as to the advisability of performing an exploratory operation, and, if only ulcer is found, perform-

1. Grimes, O. F., and Bell, H. G.: Clinical and Pathological Studies of Benign and Malignant Gastric Ulcers, *Surg., Gynec. and Obst.* 90: 357-371 (March) 1950.

2. Judd, E. S., Jr., and Priestley, J. T.: Treatment of Gastric Ulcer, *Surg., Gynec. and Obst.* 77: 21-25 (July) 1943.

3. Allen, A. W., and Welch, C. E.: Gastric Ulcer: Significance of This Diagnosis and Its Relationship to Cancer, *Ann. Surg.* 114: 498-509 (October) 1941.

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ing a vagotomy for relief. There are two reasons this is not satisfactory: First, I do not feel that a satisfactory pathological examination can be obtained by gross examination and simple biopsy of a gastric ulcer. Secondly, Dr. Dragstedt, who popularized vagotomy, has stated that it is not indicated in gastric ulcer because the recurrence rate of gastric ulcer following vagotomy is much greater than that of duodenal ulcer. In general, the gastric night secretions and the acidity in gastric ulcer may be almost normal, which Dragstedt has interpreted as evidence of decreased resistance of the gastric mucosa. For this reason he feels that vagotomy is not of significant benefit in gastric ulceration.<sup>4</sup>

Summarizing briefly, there is the ten to twenty per cent chance of malignancy, the long term medical cure rate of only fifty per cent, and the high recurrence rate of gastric ulcers following vagotomy. In addition to this, I would like to point out the relative infrequency of recurrent ulceration in those patients who have undergone subtotal gastric resection for gastric ulceration. Waltman Walters has reported this fact<sup>5</sup> and Grimes and Bell reported ninety nine cases without recurrence.<sup>1</sup> These arguments seem adequate to indicate subtotal gastric resection as the treatment of choice for gastric ulceration, and many internists of my acquaintance have now come to accept this viewpoint.

#### DUODENAL ULCER

Let us now turn to duodenal ulcer. This is first and foremost a medical problem, and should be handled by a medical man rather than a surgeon until the patient has developed one of the indications for operative management. What constitutes indications for surgical management has been and still is a bone of contention. Surgical management does not refer to closure of perforations or other emergency life saving procedures but rather the actual definitive surgery necessary for the cure of duodenal ulceration. It would be difficult to improve on those time-proven indications of obstruction, bleeding, perforation, and intractability.

4. Dragstedt, L. R.; Camp, E. H., and Fritz, J. M.: Recurrence of Gastric Ulcer After Complete Vagotomy, *Ann. Surg.* 130: 843-854 (October) 1949.

5. Walters, W.: Gastric Ulcer, Carcinomatous Ulcer or Ulcerating Carcinoma, *Ann. Surg.* 115: 521-529 (April) 1942.

The interpretation of these four indications sometimes varies. Pyloric obstruction leaves little room for argument since it is a definite indication regardless of degree. Bleeding is somewhat more vague. There are those who feel that one episode is sufficient cause for surgery. Others prefer to wait for multiple episodes. A few groups resect all bleeding ulcers immediately, without trial at medical management for control of bleeding. My feelings attempt to take a middle road. That is, if a previous bleeder has any return of symptoms he should be operated upon, for each succeeding episode of bleeding is less likely to be controlled by conservative measures, and the increasing age of the patient likewise lessens his chances of survival when it recurs.

There is also a question whether a single perforation is sufficient indication for definitive surgery. A single perforation in the course of a duodenal ulcer may be considered an accident, but perforation with later recurrence of symptoms indicates a particularly virulent type of ulcer. Dr. Francis D. Moore and his associates found that in a series of patients with previous perforation and renewed symptoms eighty two per cent could not be managed medically, and only fifteen per cent had satisfactory subsequent courses.<sup>6</sup> In view of these arguments I feel that any patient who has had a perforation and who has any return of ulcer symptoms is a candidate for definitive surgery.

The point at which a patient becomes intractable is not easily discernible for there are few duodenal ulcers that cannot be healed by hospitalization and strenuous medical management. Since this is unbearably expensive when repeated from time to time, and since it is not a pleasant way of life, I feel that a patient should be considered intractable if he cannot live satisfactorily within his environment without recurrent ulceration. The physician must ask himself whether it is better to have these patients drag on for years with chronic ulceration, always subject to possible fatal perforations or bleeding, or to operate upon them early and give them an excellent chance for complete recovery and a normal life.

Once the patient has come to definitive surgery for duodenal ulcer, the surgeon

6. Moore, Francis D., et al.: The Effect of Definitive Surgery on Duodenal Ulcer Disease, *Ann. Surg.* 132: 652-680 (October) 1950.

must choose the operation which he deems advisable for that patient. At the present time, simple gastro-enterostomy has fallen into disrepute because of the high incidence of recurrence following it. Likewise, simple vagotomy has been abandoned because of the high incidence of complications and recurrent ulceration. The primary argument now lies between vagotomy and gastro-enterostomy on the one hand and subtotal gastric resection on the other. In opening the discussion of these two let me briefly review the different phases of gastric secretion.

There are three phases: the cephalic, the gastric, and the intestinal. The cephalic phase is mediated by the vagus nerves and accounts for about forty five per cent of gastric secretion. The gastric phase is produced by liberation of the hormone gastrin from the pyloric antrum of the stomach upon contact with food. This phase produces forty five per cent of gastric secretion. The intestinal phase, mediated through an uncertain mechanism, is brought about by contact of the intestinal mucosa with food, and produces about ten per cent of gastric secretion. This was beautifully reviewed and demonstrated by Dragstedt and his co-workers in 1950.<sup>7</sup>

Vagotomy has as its aim the abolition of the cephalic phase and was performed alone until the incidence of postoperative gastric retention necessitated the concomitant gastro-enterostomy. The proponents of vagotomy have pointed out that the operation is simpler and has a lower mortality rate than subtotal gastric resection, with results which are just as good or better than resection.

Subtotal gastric resection abolishes the gastric phase of gastric secretion, and, in addition, actually removes a large part of the secreting gastric mucosa. Those who favor resection advocate the removal of at least seventy per cent of the stomach before it is considered adequate. The Mayo group has postulated that at least 170 grams of stomach should be removed. The short segment resection, as proposed by Reinhoff of Johns Hopkins, has largely fallen from favor.

In comparing these two operations there are three things to be considered: the mortality rate of the operation, the recurrence

of ulcer, and the postoperative complications. Subtotal gastric resection does present a higher mortality rate, varying from 2.5% to 5% in competent hands as compared with 1 to 2% for vagotomy and posterior gastro-enterostomy. However, the similar incidence of recurrence reported by the proponents of vagotomy has not been observed by other investigators. Rather, it has been somewhat higher, for, regardless of the operator, the vagus nerves do not always lend themselves anatomically to complete section due to premature branching above the esophageal hiatus.

The postoperative complications also favor gastric resection, for with this operation the primary cause of discomfort is the dumping syndrome. This may be quite disabling at first but usually becomes negligible in three months or less. The vagotomy may produce several different complications, such as diarrhea, poor gastric tone, delayed emptying, and others.

The literature that has been brought out in support of each of these procedures has become almost staggering in its volume. It has recently been added to by those who now advocate a combination of gastrectomy and vagotomy. There is no intention here to attempt a review of the literature but I feel that I should mention those groups who advocate the various procedures. Drs. Dragstedt of Chicago and Grimson of Durham, North Carolina are those who are probably the most ardent proponents of vagotomy and gastro-enterostomy. The proponents of the combined operation are Drs. Wangenstein of Minneapolis and R. H. Smithwick of Boston. There are many supporters of these men throughout the country but the majority of surgeons and university groups still favor subtotal gastric resection as the operation of choice for duodenal ulcer. The American Gastro-Enterological Association has reviewed the subject carefully, through a so-called Vagotomy Committee, and has chosen subtotal resection.<sup>8</sup>

Although it would seem that subtotal gastric resection is the operation of choice, there is a definite place for vagotomy and gastro-enterostomy in the treatment of those duodenal ulcers whose position would neces-

7. Dragstedt, L. R., et al.: Quantitative Studies on the Mechanism of Gastric Secretion in Health and Disease, *Ann. Surg.* 132: 626-640 (October) 1950.

8. Lahey, F. H.: *Ann. Surg.* 135: 651 (May) 1952.



sitate endangering the common duct in performing subtotal gastric resection, or those with sufficient inflammatory reaction at the time of surgery to endanger duodenal stump closure. It is these patients who are most likely to suffer complications and fatalities from subtotal gastric resection.

The combined gastrectomy-vagotomy operation that has been proposed has not yet had adequate time for evaluation. Those who advocate this procedure state that one advantage lies in only having to do a fifty per cent gastrectomy in combination with vagotomy. There are two reasons I should like to point out for not accepting this procedure as yet: The first is that, in the event vagotomy is incomplete, fifty per cent gastrectomy is not sufficient. Second, since subtotal resection cures about 95% of duodenal ulcers, it seems unnecessary to subject the large majority of patients to the troublesome postoperative effects of both procedures merely to protect the very few from recurrence. Rather, vagotomy should be reserved for those who develop recurrence.

are very lax in keeping follow-up clinic appointments, and yet, should they have recurrent difficulty, they have no other recourse than to return to the charity clinic. For this reason, in most instances, lack of return means a satisfactory course.

Our experience with subtotal gastrectomy for peptic ulceration may be seen in Table 1, where the operative mortality, occurrence of the dumping syndrome, recurrence rate, and length of follow-ups are recorded.

DISCUSSION

I would like to take up the deaths briefly, the dumping syndrome postoperatively, and the cases in which recurrent ulceration appeared.

*Deaths:* There were three deaths, two occurring from resection for duodenal ulcer, and one in resection for gastric ulcer.

1. This patient underwent subtotal resection for duodenal ulcer and experienced an uneventful postoperative course for seven days, at which time he expired suddenly from a massive pulmonary hemorrhage. Autopsy revealed blood in the pulmonary tree, but it was

TABLE 1

|                             | Operative Mortality | Follow-Up Returns | Length of Follow-Up |          |             | Immediate Dumping |         | Recurrence |
|-----------------------------|---------------------|-------------------|---------------------|----------|-------------|-------------------|---------|------------|
|                             |                     |                   | 0-6 mo.             | 6-12 mo. | 12 mo. plus | 0-3 mo.           | 3-6 mo. |            |
| Duodenal Ulcers<br>31 Cases | 2(6.4%)             | 29(94%)           | 10(32%)             | 15(49%)  | 4(13%)      | 5(16%)            | 3(9.7%) | 2(6.5%)    |
| Gastric Ulcers<br>13 Cases  | 1(7.7%)             | 9(69%)            | 2(15%)              | 3(23%)   | 4(31%)      | 0                 | 1(7.7%) | 0          |

MATERIAL

The following material represents the consecutive cases of subtotal gastrectomy for ulceration of the stomach and duodenum done on the charity service of the Jefferson-Hillman Hospital from November 1, 1949 until April 30, 1952. During this time the surgical technique and preoperative and postoperative care were standardized enough to offer good material for comparison. No cases of gastric carcinoma have been included. In most instances the actual surgery was done by senior members of the resident staff, the others being done by the visiting staff. There is no intention of proving my previous arguments by the presentation of only forty-four cases with a short follow-up period but merely to give our experience with subtotal gastric resection. The indulgence of the reader is asked so far as to point out that on a charity service patients

not possible to demonstrate the bleeding point. No tuberculosis was found.

2. The death occurred suddenly twelve hours postoperatively, after an uneventful resection for gastric ulcer and anesthetic recovery. There was no previous state of shock or warning of impending death. Autopsy failed to reveal adequate cause for death.
3. This fifty year old white male was resected for an acute exacerbation of duodenal ulceration which had been intensively treated for two weeks on the medical service. At the time of surgery there was still considerable inflammation in and around the duodenum. Following surgery, a duodenal fistula developed which resisted four attempts at closure. Death finally occurred some thirty days after surgery, from inanition and the resulting com-

plications. This case, in my opinion, probably represents an error in judgment in that, in the face of acute duodenal inflammation, subtotal gastrectomy was performed rather than vagotomy and posterior gastro-enterostomy.

**Dumping Syndrome:** The dumping syndrome is usually described as a feeling of epigastric fullness, weakness, sweating, and dizziness, occurring immediately after eating. In our series, it was experienced by eight patients, or 26%, of those resected for duodenal ulcer. The majority recovered from this complication before three months had passed, and all had recovered in six months. Of those resected for gastric ulcer, only one patient (7.7%) developed dumping, which disappeared without difficulty within six months after resection.

**Recurrent Ulceration:** In an attempt to be accurate I have listed two patients (6.5%) as having recurrences. However, one of these patients is not definitely a recurrence. He experienced postprandial epigastric pain eleven months postoperatively. The pain was brought about by eating instead of hunger, and may well represent a late dumping syndrome. X-ray studies at that time were completely negative for marginal ulceration. Dietary management controlled this episode, and one year later he had remained completely asymptomatic. If this patient were not considered a recurrence, the recurrence rate would be 3.2%.

The second patient developed proven marginal ulceration within two months, for which a vagotomy was performed. Four days afterwards he had a severe hemorrhage from his ulcer which necessitated additional gastric resection. A gastrocolic fistula developed, together with multiple lung abscesses from aspiration pneumonitis. Death occurred from these complications three months later.

There were no recurrences in those patients who were resected for gastric ulcer.

#### SUMMARY AND CONCLUSIONS

1. The presence of a gastric ulcer is in itself an indication for surgical intervention.
2. Subtotal gastrectomy has been accepted as the operation of choice in gastric ulcer, even by those who champion vagotomy.
3. Duodenal ulcer should be managed medically unless surgical indications—ob-

struction, perforation, bleeding and intractability—arise.

4. Adequate subtotal gastric resection is the operation of choice of the Vagotomy Committee of the American Gastro-Enterological Association and the majority of the university groups for duodenal ulcer.

5. Combined vagotomy and gastro-enterostomy should be added to the surgeon's armamentarium as an alternate procedure, to be used when conditions are present which increase the dangers of gastric resection.

6. The experience of the surgical service of the Medical College of Alabama with subtotal gastric resection for gastric and duodenal ulcer from November 1, 1949 until April 30, 1952 has been presented and discussed. Generally, the findings of this group have been similar to those of other university groups throughout the country from the standpoint of mortality and recurrent ulceration.

900 Times Building.

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**Gallbladder Disease—**It should not be regarded as unusual for attacks of gallstone colic to bear no apparent relationship to diet. Other factors, notably parturition or anxiety, are frequently related to the onset of the attack.

The need for exploration of the common bile duct may become apparent in the course of any operation upon the gallbladder, however simple the problem may have appeared before hand. Extension of the surgical procedure to include exploration of the ducts, however, is associated with a substantial increase in surgical mortality and morbidity. Thus, while it is a grave error to fail to perform a necessary exploration of the common duct, it is also inadvisable to explore the duct indiscriminately.

Absence of fever or leukocytosis may coexist with progressive acute cholecystitis or even with early gangrene of the gallbladder. Perforation of the gallbladder is a serious and not infrequent complication which is as likely to occur in association with a single large stone as with multiple small stones.

With respect to quiescent gallstones, a policy of surgical intervention is recommended unless specific contraindication to operation exists. This attitude is based upon the expected incidence of carcinoma in calculous gallbladders, and upon the strong probability of development of obstructive or inflammatory symptoms at some future date. Advanced age offers no protection against the development of such symptoms, and it is obviously less hazardous to perform an elective cholecystectomy in middle age than an urgent cholecystectomy in later years.—*Sparkman, Nebraska M. J., Dec. '52.*



## ULTRASONICS IN OSTEOARTHRITIS

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Medical science made tremendous progress in the first half of this century, especially during the last twenty years. Internal medicine was enriched with the discovery of the sulpha drugs and the antibiotics, orthopedic surgery was improved with new technics in reducing, fixing and splinting fractures, surgery was advanced through now operative skills, and physical medicine added new modalities, such as short wave therapy, electronics and ultrasonics.

As early as 1927 Wood and Loomis published their work on "The Physical and Biological Effects of High Frequency Sound Waves of Great Intensity."<sup>1</sup> Then, in 1932, Erwin Schliphake investigated the effects of ultrasonic waves. An international congress was held at Erlangen in 1949 when seventy-two papers on ultrasonics were read. The second international congress was held in Rome in 1950 and additional papers were presented. In the United States, excellent research work was published by Frank H. Krusen and his coworkers on the "Present Status of the Use of Ultrasonic Energy in Physical Medicine,"<sup>2</sup> and by H. P. Schwan and Edwin L. Carstensen on the "Advantages and Limitations of Ultrasonics in Medicine."<sup>3</sup> The January 1952 number of the British Journal of Physical Medicine was devoted entirely to ultrasonics.

New discoveries and technics arouse waves of enthusiasm among clinicians and research workers to the extent that scientific investigations are overshadowed by intense optimism. Yet, with the great number of papers being published, one must keep an open mind in following the middle road of not being overoptimistic nor too condemning. The test of time, strengthened

with clinical results, will affirm some of these claims and relegate others to oblivion.

Whether it concerns drugs or physical agents, medical research is the lighthouse keeper on the shores of a confused sea of *modus operandi* and impending dangers of new therapeutic procedures. The indiscriminate application of any new modalities should be condemned just as strongly as routine injections of antibiotics for every presenting pathologic condition. Ultrasonics will have to face the same critical test of time as did short wave therapy in order to gain its rightful place in the armamentarium of physical medicine.

What is sound? Sound is the mechanical vibration of all frequencies audible or inaudible to the human ear. Vibrations of sound waves beyond the range of the human ear are ultrasonic. Ultrasonic waves, in the presently constructed machines, are produced by electric excitation of a quartz crystal housed in an applicator which emits mechanical oscillations of a very high frequency. These waves will penetrate tissue provided the applicator is in close contact with it, thus avoiding air spaces. Ultrasonic energy cannot be transmitted through air because even a thin film of air of 0.00001 cm. is ten times thicker than the amplitude of an ultrasonic wave of the order of 0.000001 cm.<sup>4</sup>

There are many concepts of the mode of action of ultrasonic energy and future critical evaluations will undoubtedly establish it on a sound and scientific basis. According to Schwan and Carstensen,<sup>3</sup> ultrasound is a mechanical vibration and its effect must be primarily physical in nature: first, the thermal effect, the importance of which in biophysical problems is established, and, secondly, there are numerous non-thermal effects which may or may not be important.

Erwin Schliphake,<sup>5</sup> writing in the British Journal of Physical Medicine, states that, besides the mechanical effects of various kinds observed on objects which are immersed in a sound-bath of great energy, the formation of gas bubbles or cavitation plays

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1. Wood, R. W., and Loomis, A. L.: The Physical and Biological Effects of High Frequency Sound Waves of Great Intensity, *Physiotherapy Rev.* 29: 373, 1927.

2. Krusen, F. H., et al.: Present Status of the Use of Ultrasonic Energy in Physical Medicine, *South. M. J.* 45: 55-60 (Jan.) '52.

3. Schwan, H. P., and Carstensen, E. L.: Advantages and Limitations of Ultrasonics in Medicine, *J. A. M. A.* 49: 121-125 (May 10) '52.

4. Bauer, W. A.: Technique of Ultrasonic Therapy, *Brit. J. Phys. Med.* 14: 145-149 (July) '51.

5. Schliphake, E.: Supersonic and Ultra-Short Waves, *Brit. J. Phys. Med.* 13: 145-152 (July) '50.

a great role in many biologic effects. Acceleration of reaction points toward the chemical effects; in fact, there may be a colloidal-chemical effect. All resulting chemical phenomena, according to Dognon,<sup>6</sup> could be accounted for by the liberation of oxygen, while the increased activity of the oxygen itself might possibly be due to high pressure phenomena. As for the biologic effect, Dognon, et al. state that it is due to the liberation of dissolved gases, cavitation.

According to the publication of F. Tschannen, ultrasonic energy has analgesic effect through action on the nervous system. In the application of ultrasonic waves to nerve segments a relaxation of muscle spasm occurs, and thus the vicious circle of irritation, hypersensitivity of the nerve centers, and muscular and vascular spasm is interrupted at some point, probably at the synapses, and relief of pain ensues. Hintzelmann<sup>7</sup> maintains that in all probability it is a mechanical effect which is highly refined. It is tissue micromassage, and ultrasonics penetrates deep into the fine molecular structures.

In summarizing the properties of high energy sound field, E. C. Gregg, Jr.<sup>8</sup> states: "Vibration of this sort is characterized by extremely high pressures and large accelerations of the particles of liquid in the field. These in turn produce cavitation, and, if dissolved gas is present, intense local agitation, high local temperatures, and possibly electric potentials. The net result is an exhibition of lethal and sterilizing effect, strong dispersive power, degassing processes, thermal and oxidizing effects, and coagulation."

Let us examine the constituents of the human body. The principal solid content of the white fibrous tissue is albuminoid collagen. Muscle contains about twenty five per cent of the solid matter, of which four-fifths is protein material and the remaining one-fifth extractives and inorganic salts. In the extractives are the nitrogenous and non-nitrogenous components. In the non-nitrogenous

bodies there are glycogen, dextrin, sugars, lactic acid, acid inositol and fat. In the nitrogenous bodies there are xanthine, uric acid, urea and other substances. The water content of the non-striated muscles is 80.6 per hundred parts of fresh muscles, seventy two and 9-tenths in the skeletal, and 91.8 in the blood serum; also potassium, sodium, calcium, iron, chlorides, sulphur and nitrogenous extracts. The nerve tissue contains a large per cent of water, together with cholesterol, lecithin, globulin, nucleoprotein, lipoids and inorganic salts.<sup>9</sup> In other words, the human body is a huge chemical reservoir bathing in water and, if these chemicals are subjected to ultrasonics, heat alone could not be responsible for cavitation, degassing, physio-colloidal, chemical and mechanical reactions or phenomena. If one would ascribe the thermal effect as the principal action of ultrasonics, then why could not the same or similar reactions be accomplished with short wave diathermy, the chief indication for which is the production of heat? Yes, heat may be a contributing factor in the therapeutic action of ultrasonics but the non-thermal effects, such as micromassage, oxidation, chemical, biologic and neural actions, are far more important. Probably the whole conception, or at least part of it, may prove to be erroneous but it opens up a vast field for clinical research.

Not only is the mode of action of ultrasonics unsettled but there is also the problem of dosage, clear indications and definite contraindications to be defined. Until this has been done, cases have to be carefully selected, and moderation in dosage and time element adopted. Small dosage may be beneficial in certain selected cases, whereas large doses will destroy the tissues and may cause irreversible reactions in the body, as was shown by the detailed experiments of F. H. Krusen and his coworkers.<sup>10</sup>

Thirty-nine cases of osteoarthritic patients were treated with ultrasonics, employing the Birtcher type of ultrasonic unit operating on alternating current—60 cycles—110-120 volts. The plated area of the crystal is 7 square centimeters. The total energy

6. Dognon, A.; Biancani, E., and Biancani, H.: *Ultra-sons et Biologie*, Gauthier Villars, Paris, 1937.

7. Hintzelmann, U.: *Ultrasonic Therapy in Rheumatic Disease*, Deutsche Medizinische Wochenschrift 72: 350 (July) '47.

8. Gregg, E. C., Jr.: *Biological Effects of Ultrasonic Vibrations*. Biophysical Research Methods, by Uber, F. M., Interscience Publishers, New York, London, 1950, p. 328.

9. Hawk, P. B.: *Epithelial and Connective Tissues, Teeth, Muscular Tissue, Nervous Tissue*, Practical Physiological Chemistry, 8th ed. P. Blakiston's Son and Co., Philadelphia, Pa., 1923.

10. Krusen, F. H., et al.: *Present Status of the Use of Ultrasonic Energy in Physical Medicine*, South. M. J. 45: 55-60 (May) '52.



TABLE 1  
JOINTS AND CORRESPONDING NERVE ROOTS  
TREATED

| Joints            | Nerve Roots |
|-------------------|-------------|
| Hip               | L3-L5       |
| Knee              | Th12-L3     |
| Ankle             | S1-S4       |
| Shoulder          | C4-Th2      |
| Elbow             | C4-C6       |
| Wrist and Fingers | C5-Th2      |

TABLE 2  
RESULT OF TREATMENT WITH ULTRASONIC  
THERAPY

| Age | Sex | Area Involved | Dura-<br>tion | No. of<br>Treat-<br>ments | Result                       |
|-----|-----|---------------|---------------|---------------------------|------------------------------|
| 61  | F   | D             | 2 months      | 12                        | Greatly improved             |
| 50  | M   | L             | 1 week        | 6                         | Greatly improved             |
| 31  | M   | L             | 1 week        | 4                         | Slight improvement           |
| 40  | F   | L             | 1 month       | 6                         | Greatly improved             |
| 52  | F   | L             | 1 week        | 3                         | Moderate improvement         |
| 58  | F   | Hands         | 2 weeks       | 10                        | Greatly improved             |
| 68  | F   | D and L       | 3 months      | 8                         | Improved                     |
| 47  | F   | C             | 1 year        | 4                         | Slight improvement           |
| 22  | F   | D             | 5 years       | 6                         | Improved                     |
| 59  | M   | Knees         | 8 months      | 12                        | Improved                     |
| 31  | M   | D             | 1 year        | 23                        | Greatly improved             |
| 30  | F   | L             | 2½ weeks      | 8                         | Improved                     |
| 40  | F   | L             | 4 months      | 4                         | Very little improve-<br>ment |
| 27  | M   | L             | 6 months      | 6                         | Improved                     |
| 29  | M   | L             | 3 months      | 3                         | Moderate improvement         |
| 38  | F   | C             | Recurrent     | 6                         | Improved                     |
| 54  | F   | C             | 6 months      | 12                        | Improved                     |
| 45  | F   | C             | 2 years       | 20                        | No improvement               |
| 38  | F   | D             | Recurrent     | 5                         | Moderate improvement         |
| 44  | F   | C             | 6 months      | 6                         | No improvement               |
| 33  | F   | L             | 3 months      | 12                        | Greatly improved             |
| 40  | F   | D             | 6 months      | 21                        | Greatly improved             |
| 40  | M   | L             | 3 weeks       | 7                         | Moderate improvement         |
| 41  | M   | L             | 2 years       | 12                        | Moderate improvement         |
| 52  | M   | L             | Recurrent     | 6                         | Improved                     |
| 44  | F   | Elbows        | 1 week        | 4                         | Moderate improvement         |
| 56  | F   | C             | 4 months      | 6                         | No improvement               |
| 44  | F   | L             | 4 months      | 9                         | Slight improvement           |
| 44  | F   | Elbow         | 3 years       | 3                         | Very slight im-<br>provement |
| 76  | M   | D and L       | 2 months      | 9                         | No improvement               |
| 34  | M   | L             | 1 month       | 6                         | Greatly improved             |
| 48  | F   | C             | 3 months      | 8                         | Greatly improved             |
| 50  | F   | Hip           | 4 months      | 12                        | Greatly improved             |
| 43  | F   | Knees         | 2 years       | 10                        | Improved                     |
| 68  | F   | Hip           | 1 year        | 18                        | Slight improvement           |
| 58  | F   | D             | 7 months      | 22                        | Greatly improved             |
| 38  | M   | D             | Recurrent     | 6                         | Greatly improved             |

In the above table, D is dorsal vertebra, L is lumbar, and C is cervical.

In the evaluation of the clinical results, slight improvement signifies the lessening of pain, improved is the disappearance of pain and spasm, greatly improved is when the patient could resume his normal activities.

Recurrent designates patients who were treated previously by me with other modalities.

delivered from the head is therefore always 7 times the meter reading, provided the entire front of the head is in contact with the conductive medium. The crystal is X-cut and the unit operates at one megacycle per second. The maximum energy output is 3½ watts per square centimeter. In our treatments the maximum energy output never exceeded 2 watts per square centimeter and the time was 10 minutes. Before treatments were instituted the area to be treated was

anointed with a heavy grade of mineral oil in order to assure good contact and thus exclude the air films. Then the applicator or the head was applied with gentle pressure, using a back and forth motion at the rate of four inches per second. If the patient complained of pain, then the wattage was stepped down. In certain instances the local treatment was followed by treating the corresponding nerve roots of the joints involved, as advocated by the work of Tschanen,<sup>11</sup> allotting 2/3rds of the time to the nerve roots and 1/3rd of the time to the local area. In treating the hands and fingers the parts were submerged in preboiled water and the applicator was held under the water opposite the parts to be treated from a distance of 2-4 cm.

Treatments were given every other day for 12 to 23 treatments in the severe cases and 3 to 10 treatments in the less severe cases. Of course, as is customary in private practice, a few patients will not take the maximum number of treatments because as soon as they feel a little better, then their appointments are not kept.

#### CONCLUSION

1. Ultrasonics has a definite place along side other modalities in physical medicine.

2. Further research is necessary to establish dosage, time element, indications and contraindications.

3. Overenthusiasm has no place in ultrasonics but a conservative attitude should be observed.

4. In a number of osteoarthritic patients there was definite improvement in relieving pain and muscle spasm.

916 S. 20th Street.

11. Tschanen, F.: Effects of Ultrasonic Therapy on Rheumatic Diseases and Circulatory Disorders, Brit. J. Phys. Med. 15: 7-9 (Jan.) '52.

Half the hospitals in the United States look to the Red Cross for all or part of the blood needed to treat their patients. During the fiscal year ended June 30, 1952, the Red Cross collected 1,681,500 pints of blood for civilian, military, and veteran hospitals in this country. The Red Cross and cooperating blood banks collected an additional 2,439,700 pints for shipment to Korea and for dried plasma defense reserves.

## JOURNAL EXCERPTS

**Industrial Dermatoses**—The most prevalent skin conditions in industry are undoubtedly minor injuries and minor infections associated with injuries, but the majority of severe and disabling dermatoses are instances of dermatitis venenata or contact dermatitis. While dermatitis venenata is usually correctly diagnosed, the exact exciting agent, whether occupational or non-occupational, cannot always be determined without careful study. Often dermatitis venenata is confused with dermatitis resulting from infections, particularly of the mycotic or fungous type and with eczemas of allergic and endogenous origin. Complications are frequent and difficult to correct, and disabilities and recovery may be protracted. Early recognition and correct early treatment are therefore of utmost importance.

Dermatitis venenata is an inflammation of the skin resulting from contact with an irritant agent, usually of chemical but sometimes of plant or animal origin. The contact produces an inflammation first in the epidermal cells and then in the dermis, with associated vasodilation and edema. The effect of the latter on sensory nerve endings produces pruritis of variable severity which may be the patient's first intimation of trouble. The eruption may be a simple erythema, a vesicular or exudative inflammation, or a chronic thickening or lichenification of the skin, depending upon the intensity of the irritation and the frequency and duration of the exposure. The inflammation is most often diffuse. It may be patchy and circumscribed. The character and configuration of the earliest manifestations and their localization may be the key to the diagnosis.

Difficulty in recognition may result following alteration through manual irritation, neglect, or secondary infection. Aggravation of dermatitis may result for similar reasons or as a consequence of injudicious treatment or intolerance of medication through previous sensitization. Traumatic, physical and infectious dermatitis are to be differentiated. Dermatitis venenata frequently results from cleansing agents used at work or from exposures occurring at home or at an avocation, instead of from a suspected material with which contact has been made in employment. Minor mechanical injuries of the skin from abrasive particles in materials used, such as metal particles in grinding oils and solutions, frequently serve as portals of entry for either chemical irritants or infection. Softening of the protective keratin covering of the skin or excessive removal of protective sebum by strong soaps, alkalies, and solvents, or sweating sufficient to macerate the epidermis or to produce solution of a solid chemical, may result in dermatitis from contacts that would otherwise not be harmful. The incidence of occupational dermatoses almost always increases very much during hot weather.

In certain individuals and under certain circumstances, any chemical may provoke derma-

titis. The eruption is usually first localized approximately to the site of most immediate and most frequent contact with the offending agent. It may however be generalized at the onset when caused by an agent that is in the form of a vapor, dust or readily diffusible liquid. Whatever its cause, it frequently becomes widespread and even generalized if not promptly recognized and the exciting cause removed.—*Foerster, Wisconsin M. J., Nov. '52.*

**Therapy in Tuberculosis**—Isonicotinic acid hydrazide was ushered into the field of therapy in tuberculosis with fanfare, pictures, music and dancing. The drug is now assuming its more mature reasonable but specific place in the pattern of treatment. Of course, it is not a new drug but an old one with a new therapeutic application. Interestingly enough, two pharmaceutical firms had been carrying on research studies with this same drug absolutely independently and unknowingly of each other until a time early this year when investigators of each firm got their heads together and discovered their common endeavors. Spectacular unplanned announcements in the lay press occurred but gradually the scientifically proven facts about the use of the drug are being given to us. The important facts are cited for our guidance in its use. The drug has strong anti-tuberculous activity in the test tube. This activity is bacteriostatic but there are certain observations made that suggest possible bacteriocidal qualities. In vivo the drug has given promising results in arresting the course of experimentally produced disease. Evidence of emergence of strains of tubercle bacilli which may be resistant to isonicotinic acid hydrazide either in the test tube or animal were at first meager but most recent studies indicate this to be possible. The drug is of relatively low toxicity in dosages which appear to be effective. The following transitory side-effects have been observed: (1) constipation, (2) increased reflexes, (3) eosinophilia, (4) slight drop in hemoglobin concentration, (5) difficulty in starting micturition, and (6) occasional casts and traces of albumin and reducing substances in the urine. Impairment of renal or hepatic functions to serious degree have not been observed so far. It is well distributed promptly in effective levels of concentrations in the blood serum, pleural fluid and cerebrospinal fluid. The indicated daily dosage is in the range of 3 to 5 mg. per kg. body weight which means 150 to 300 mg. per day for the average adult. This is given by mouth in two or three divided doses after meals. In clinical application the following observations are most striking: (1) reduction of fever, if present, occurs in two or three weeks in majority of cases, (2) reduction in cough and volume of sputum and in the number of bacilli raised, as determined by smear, is noted.—*Skavlem, West Virginia M. J., Dec. '52.*



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## ANSWER THE CALL

Every month in the year thousands of people in need or distress reach out to the Red Cross for the help they must have, help that comes from the generous efforts and support of housewives, businessmen, industrial workers, school children, professional workers—your nextdoor neighbors—and countless others who serve their fellow man through the Red Cross.

In a time of tension and cynicism it is well to be reminded of the inherent goodness of people, to call attention to their constant voluntary efforts to make life a little better for the men and women in the armed forces, for hospitalized veterans, for disaster sufferers, and for those in need in other lands.

Although the heart and hands of the Red Cross are provided by hundreds of thousands of volunteers, money is also needed to collect blood; to provide financial assistance for servicemen, veterans, and their dependents; to furnish emergency aid and rehabilitation to disaster victims—services that can be provided only through the voluntary financial support of millions of Americans.

Every March Red Cross volunteers turn to their neighbors and ask help in answering the call of those in need. Let us respond generously to this appeal so that we can answer the call of humanity through our Red Cross.

## HEALTH SERVICES ADVISORY COMMITTEE IN CIVIL DEFENSE

The Federal Civil Defense Administration has requested the American Medical Association, the American Hospital Association, the American Veterinary Association, the American Dental Association, the American Pharmaceutical Association, the American Nurses Association, and the Association of State and Territorial Health Officers to suggest appropriate members of their respective organizations to form a Health Services Advisory Committee in each of its nine regions.

While the formation of the Committee is not yet complete, the Atlanta office of the Federal Civil Defense Administration, the headquarters of Region III, which comprises the states of Alabama, Georgia, Florida, Mississippi, South Carolina, and Tennessee, has announced the names of those who have indicated they would serve. They are:

Representing the American Medical Association:

E. M. Dunstan, M. D., Atlanta, Georgia,

Charles Downman, M. D., Atlanta, Georgia.

Representing the American Hospital Association:

Charles W. Flynn, Jackson, Mississippi,

Edwin B. Peel, Atlanta, Georgia.

Representing the American Veterinary Medical Association:

D. A. Sanders, D. V. M., Gainesville, Florida.

Representing the American Dental Association:

H. Harvey Payne, D. D. S., Atlanta, Georgia.

Representing the American Nurses Association:

Mrs. Mildred B. Pryse, R. N., Atlanta, Georgia.

Representing the Association of State and Territorial Health Officers:

R. H. Hutcheson, M. D., Nashville, Tennessee,

T. F. Sellers, M. D., Atlanta, Georgia.

This committee will advise and assist, within its region, in the implementation of policies and instructions formed by the Federal Civil Defense Administration working with the national organizations and federal agencies.

It is not intended to replace, but would complement and strengthen the work of any other groups of state civil defense health and medical services directors.

Dr. John M. Whitney, Medical Officer for Region III, will head the committee. Organization of the committee is under way. However, the number of meetings will be held at a minimum consistent with good progress.

As the meetings will be held in Atlanta, the organizations were requested to nominate representatives in or as close to Atlanta as possible, in order to hold down time and expenses, which explains the predominance of Atlanta residents on the committee.

It should be emphasized that these members represent their respective organizations in every one of the six states in the region.

## ATLANTA GRADUATE MEDICAL ASSEMBLY

The Atlanta Graduate Medical Assembly and Southeastern Section of the American College of Surgeons will meet simultaneously in Atlanta on February 23, 24, and 25, according to Dr. Mark S. Dougherty, Chairman of the 1953 A. G. M. A. meeting.

Heading the arrangements for the American College of Surgeons is Dr. William G. Hamm, of Atlanta. Reservations for this joint meeting can be made by writing Mrs. S. R. Roberts, Executive Secretary, Atlanta Graduate Medical Assembly, 15 Peachtree Place, N. W., Atlanta.

Many noted guest speakers will address the meeting and symposia and important medical developments will be presented. The completed program will be announced at a later date.

The meeting is acceptable for postgraduate credit by the American Academy of General Practice.

In making this announcement, Dr. Dougherty stressed the importance of early registration. He further stated that the registration fee of \$10.00 will be refunded up to one week prior to the start of the meeting if notification is received.

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**Convulsive Disorders**—Proper mental hygiene is exceedingly important. Patients should not be shrugged off by merely administration of drugs. Most patients suffer more from the fear of seizures and social implications than from the seizure itself. The social stigma is still present even in this period of mental health enlightenment. This attitude is fostered by concealment by the patient's relatives, and the prevalent tendency that employers and educators have of getting rid of the epileptic from work and school. A great deal of restriction is introduced under the guise of safety. Patients and their families need to be protected from discouragement and this element of horror. Even though the physician cannot attain complete relief of seizures in every patient, he can inject and cultivate hope and morale in many. All questions relating to intellect, sanity, heredity, marriage, et cetera should be frankly discussed. The various myths and folklore pertaining to epilepsy should be exploded. It must be emphasized that the anticonvulsant drugs employed are neither "dope" nor habit forming. Clinical evidence indicates that in a number of patients anxiety, tension, fear, and the like may actually precipitate or increase the number of seizures.—*Miller, Minnesota Med., Nov. '52.*



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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### FOR YOUR PROTECTION

(The above is the title of a pamphlet, reprinted below, which has been prepared by The Committee on Medical Service and Public Relations. It is designed for your patients and for their information. Copies are available at the Public Relations Office.)

#### *You Should Know—*

We speak of our government—national, state, county, or local—as a representative democracy; and this government is based on laws, laws by which we live, by which authority is granted public servants, or by which limitations are placed on those acts that may be detrimental to the public good.

Our governmental system was set up by our forefathers for the explicit purpose of handling those matters which individuals, acting alone, could not properly execute, for example, protection from invasion or protection of our property rights. Now, as in the beginning, our government exists for us and our protection and not we for it. So we see that ours is a government of laws, designed for our protection.

One of the laws of our state government is known as the Medical Practice Act. It sets forth the requirements a person must meet before he will be allowed to practice, as a profession, the healing arts by any system whatsoever. Under this law, he must appear before the State Board of Medical Examiners and pass an examination in certain basic subjects, a knowledge of these subjects being considered essential before a person is allowed to handle anything so precious as human life—your life. This law in its present form has been in effect since 1907, and prior to that time there were other laws which set out this “floor” below which no practitioner was allowed to fall if he were to be granted a license. In fact in 1823, more than one hundred years ago, when the first Medical Practice Act was passed, this minimum requirement was stipulated.

Once a person has passed these basic requirements set forth in our laws, he may then practice the healing arts according to his chosen system. He is issued a license by

the State Board of Medical Examiners. This license is the only means by which a patient can be sure that a doctor has the basic minimum knowledge to equip him to handle human ills and human life. This license and the law behind it are both for your protection, for without them you could never be absolutely certain. And if one thinks for a minute, he will realize that he needs protection from quacks and charlatans because the average citizen does not and cannot know the intricacies of the human body or of medical science.

From time to time proposals are made to our State Legislature which would change the Medical Practice Act, and almost invariably these proposals would lower the requirements necessary for entering the practice of the healing arts. In other words they would “open the gate” to practitioners who have heretofore been unable to practice legally because they are unable to pass a minimum requirements examination. It would be a sad day indeed if we said to ourselves and to the world, “Come on, boys. Set up shop. Come one; come all. Whether you can or cannot demonstrate at least a minimum knowledge is unimportant!”

One favorite method of trying to lower this minimum requirement is to propose that this system of healing or that system be granted a board of its own, that this board be self-governing, and that it issue licenses after a man has shown proficiency in certain subjects. The great catch is that the listed subjects are never all of those as set forth by our present law. If the minimum is lowered, so in turn is your protection.

Usually those who would lower the standards are people who have gone to inferior schools, who cannot pass the minimum requirements, and who are trying to have the Legislature legalize them at the expense of the public. Some have doubtlessly already been practicing illegally and are in effect asking your legislators to make them legal—and this after having shown flagrant disregard for the laws and for your well-being.

Your State Government cannot say to you that any practitioner will go forth to prac-

tice, remain ethical, and always be correct. At present, however, it can say that this practitioner, who has a license from the State Board of Medical Examiners, has demonstrated a knowledge and proficiency in the absolute minimum of subjects that you should accept when allowing anyone to attempt to cure your ills.

It simply boils down to this. When you entrust your life, or the life of a loved one,

in the hands of a practitioner of the healing arts, you want to know that he at least has a basic knowledge upon which his experience has been built. Under Alabama's present law, a license from the State Board of Medical Examiners assures you of this. Let us not lower the protection that we have. Let us defend it and, when necessary, strengthen it.

*It May Mean Your Life!*

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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

#### DANGER IN INFLUENZA

One of the troublesome diseases that has not yet been mastered is influenza. It is true that much has been found out about it during recent years and decades. But it is still far from conquered. Victims and their physicians have complained during the past year or two that the disease seemed more like that which struck down so many people in 1918 and 1919, tougher and harder to handle than formerly. That may have been just a supposition, without solid basis. But there may be something to it. At any rate, the mortality and case-reporting records show that influenza is still very much with us. Every indication is that it will be for a long time. It still needs to be regarded as a serious disease problem. It still commands, or should command, our serious attention.

Like most other forms of illness, this one seems to have its roots in mystery. Nobody knows exactly when it first appeared, or where. Also like so many other illnesses, it undoubtedly existed for a long time before it was recognized as a separate disease entity.

One story having to do with its origin, or at least its recognition as a separate cause of illness, tells us that the people of Italy began experiencing a troublesome epidemic sometime in the eighteenth century. The disease that was causing so much illness and such a disturbingly large number of deaths seemed to stand in point of seriousness somewhere between a bad cold and pneu-

monia—a great deal worse than the former, somewhat less serious than the latter. At that time there was a strong inclination to attribute illness to the influence of the heavenly bodies. In this case those medically primitive Italians believed it was the stars that caused this strange new malady to appear apparently out of nowhere, and then disappear into the nowhere from which it had appeared. So they named it influenza—from *influence* of course, not stars.

That may or may not be the true origin of this disease, as we know it. But it at least sounds plausible.

Several things about influenza are not open to conjecture, however. One is the fact that it is a highly seasonable disease. While, unfortunately, it does not entirely disappear from the case-reporting records in summer, its prevalence drops markedly in warm weather. Normally the number of cases reported in July, for example, is only a fraction of the December or January total. That is true here in Alabama. It is also true in other parts of the country. It presumably is true as well throughout the world where there is a marked difference in the seasons.

The reasons for this wide seasonal variation are not hard to find. In general, they are the same that are responsible for the wide difference in the number of colds in summer and winter. For one thing, applicable to both diseases, there are fewer hours of sunshine in winter than in summer. For another, there is usually less sunshine on a typical winter day than on a typical summer day, in addition to that lost by the shortened period between sunrise and sunset. For still another thing, our physical associations



are closer in winter than in summer. That is, instead of getting outdoors, where we are spaced thinly, we huddle inside buildings. Our desks are close to other people's desks. If they have influenza, there is a much greater chance of our getting it. (And, conversely, if we have influenza, there is a much greater chance of other people getting it.) At work, at play and asleep, we tend in winter to stay in rooms where the emphasis is less upon ventilation and more upon warmth. In winter we greatly curtail, even if we do not entirely cut out, the vigorous outdoor exercise that gives our bodies tone and invigorates our whole system.

Influenza is a virus disease, as you probably do not need to be told. Also as you probably do not need to be told, the virus is the smallest of all disease organisms known to medical and bacteriologic science. If it were not so small, much more progress undoubtedly would have been made against it. For it is hard to fight or find out much about something that cannot be detected under the ordinary microscope and slips through the ordinary laboratory filter like leaves through a sewer pipe.

That troublesome, elusive virus is present in large numbers in the discharges from the mouth and nose of the influenza victim. When such a person is thoughtless enough, or ignorant enough, to cough or sneeze without covering his mouth and nose with a handkerchief or some other kind of cloth, those viruses are sprayed out into the surrounding atmosphere. They do not invade the air by themselves, however. They are contained in the small droplets which are discharged at such a time. In this respect of course, and in others, the influenza virus is similar to that which causes the common cold.

It is like the cold virus also in the manner in which it is passed on from the influenza-sick to the well. While the air near the carelessly coughing patient is charged with those virus-loaded droplets, anybody breathing that air is very likely to breathe them into his lungs. But one does not have to breathe that air immediately. For those droplets do not fall to the floor or pavement at once. They may remain at face level for some time. And of course, as long as they do, they are dangerous. Even after they have slowly sunk to the floor or pavement, they may not be allowed to lie there until they become harmless. A servant may stir them

up with a broom. Somebody may strike them with his shoe. Various other things may happen to take them back to face level, where they may be breathed by anyone who happens to be in that vicinity.

Even if the influenza victim is as careful as he should be about covering his mouth and nose whenever he coughs or sneezes, he still may pass on his disease to someone else. For various articles can and do become infected. That is especially true of those which are put inside the mouth—such as silverware, dishes, cups and certain articles of food. Such articles may pick up the influenza viruses and pass them on to anyone who handles them. As far as medical and public health workers have been able to find out, liquids, such as milk and water, do not play any part in the prevalence of influenza.

It is impossible to predict exactly how soon a case of influenza will follow infection with the virus. Although this is a highly infectious disease, exposure does not always bring on a case. (If it did, our problem of absentee workers and absentee pupils would be much more serious than it is.) However, that train of events—infection, then illness—frequently occurs.

When illness follows infection, it usually does so within 24 hours. However, occasionally the time is considerably longer, as much as 72 hours.

The early symptoms of influenza often are misleading, making the victim think he has something else. The first change likely to be noticed is a running nose or an inclination to cough or sneeze. Sometimes these two symptoms appear simultaneously. At this state of illness the victim is likely to think he has contracted a cold and not to think there is occasion for any particular concern. But, a little later, his symptoms remind him less of a cold and more of something more serious. There is usually a sharp rise in the temperature, so sharp and rapid in some cases as to be evident without using the thermometer. There are severe pains here and there throughout the body. The head aches. So, perhaps, do the limbs and the back. But the most conspicuous symptom the victim is likely to experience is a feeling of complete and utter exhaustion. He not only feels it when he walks around and tries to get some work done. It sweeps over him while he lies in bed. It is naturally worse when he gets up and starts moving

about, however. His legs feel like tissue paper, ready at any moment to fold up under him and let him drop to the floor. When he handles an empty glass or razor, he may find himself unable to hold it: It slips from his grasp as from the tiny fist of a young baby. A former tuberculosis patient who subsequently went through a siege of influenza commented afterward that the latter experience affected him much worse, as far as that weakness was concerned, than the former. And tuberculosis, you know, has a reputation for sapping the energy of those it attacks.

That complete exhaustion does not leave the patient in a hurry either. It is usually the last influenza symptom to clear up. Many patients get back their strength so slowly that they cannot wait to do so before going back to work. It is not at all unusual for them to feel its effects for a considerable time after the cough, the chills, the sneezing, those patches of soreness and the fever have all departed. Fortunately, it does not appear to be dangerous for the patient to return to something like normal living while still weak. Naturally, this is a matter that should be decided by the doctor in charge of a particular case—when it is safe to go back to work.

Some people think influenza is just an extremely bad cold. But it is not. These two diseases are entirely different entities. The viruses causing them are different. There is no such thing as getting a case of influenza as a direct result of having a bad cold. (You can get influenza as an indirect result of having a cold, however. A cold, for example, may lower your resistance to such an extent that an otherwise harmless virus invasion finds the soil well prepared, so to speak, for the seeds of the more serious illness.)

The relationship between influenza and pneumonia is closer than between a bad cold and influenza. It would not be correct to say that pneumonia is merely an extremely bad case of influenza. But the line of demarcation is a pretty thin one. Even the most discerning men and women of medicine find it extremely difficult to say exactly where influenza ends and pneumonia begins. Their separation for public health record-keeping purposes is quite difficult. It is so difficult in fact that certain statistical agencies do not make the attempt. Many vital statistics reports, for example, do not show how many people died within a cer-

tain period from influenza and how many from pneumonia. Instead, you will find that a certain number succumbed to influenza-pneumonia. Incidentally, that combining is not done in Alabama. The State Department of Health and the county health departments keep separate records for each disease. This is true of reported cases. It is also true of deaths. It is also true, however, that, in filling out a death certificate or morbidity report, a doctor may not be sure which of these two forms of illness should be listed as the cause of illness or of death.

Influenza has this in common with the common cold: It is much more infectious in the early, or beginning, stage than it is later.

Here are a few suggestions to keep in mind:

- (1) Keep your body properly tuned up by means of plenty of outdoor exercise, provided the weather is pleasant.
- (2) Keep your bedroom and the place where you work well ventilated.
- (3) Avoid drafts.
- (4) Eat plenty of good, wholesome food, with emphasis upon fresh vegetables.
- (5) Drink more liquids than you normally do, this meaning both water and fruit juices.
- (6) Don't wear yourself out physically at work or play.
- (7) Get more rest than usual.
- (8) Don't wear more clothes than you need to keep yourself comfortable. (It is well to dress fairly lightly for all-day wear and then take along a wrap for the time you spend outdoors.)
- (9) Keep the feet dry.

Influenza in our day, as in the time when those Italians are said to have given it its name, is certainly more serious than a cold, although usually less so than pneumonia. Its dangerous potentialities are sufficient to make us take it seriously. Let us not regard it as something that can be ignored or treated lightly.

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Tuberculosis continues to exert a greater influence upon the health and welfare of mankind than does perhaps any other infectious disease. It is a disease which frequently occurs during the early adult years of life and significantly during the economically productive years. Tuberculosis affects not only the patient as an individual but also influences the patient's entire family. The future activities and the social progress of the patient and his family are frequently altered, sometimes for better and sometimes for worse. As a truly clinical disease, tuberculosis continues to be one of the most frequently missed diagnoses. —Blake, *New York State J. Med.*, Feb. 1, '52.



## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

## SPECIMENS EXAMINED

October 1952

|   |        |
|---|--------|
| Examinations for diphtheria bacilli and Vincent's .....         | 691    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 931    |
| Brucella cultures .....   | 12     |
| Typhoid cultures (blood, feces, urine) .....                    | 504    |
| Examinations for malaria .....                                  | 194    |
| Examinations for intestinal parasites .....                     | 3,540  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 25,414 |
| Darkfield examinations .....                                    | 2      |
| Examinations for gonococci .....                                | 1,791  |
| Examinations for tubercle bacilli .....                         | 2,963  |
| Examinations for meningococci .....                             | 4      |
| Examinations for Negri bodies (microscopic) .....               | 107    |
| Water examinations .....  | 1,592  |
| Milk and dairy products examinations .....                      | 4,874  |
| Miscellaneous .....   | 1,941  |
| Total .....   | 44,560 |

## BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

## CURRENT MORBIDITY STATISTICS

1952

|                               | Sept. | Oct. | E. E.*<br>Oct. |
|-------------------------------|-------|------|----------------|
| Typhoid and paratyphoid ..... | 11    | 5    | 5              |
| Undulant fever .....          | 5     | 3    | 0              |
| Meningitis .....              | 11    | 6    | 10             |
| Scarlet fever .....           | 24    | 40   | 77             |
| Whooping cough .....          | 23    | 13   | 51             |
| Diphtheria .....              | 84    | 81   | 65             |
| Tetanus .....                 | 4     | 8    | 3              |
| Tuberculosis .....            | 223   | 201  | 222            |
| Tularemia .....               | 1     | 1    | 0              |
| Amebic dysentery .....        | 2     | 2    | 2              |
| Malaria .....                 | 5     | 4    | 65             |
| Influenza .....               | 98    | 137  | 74             |
| Smallpox .....                | 0     | 0    | 0              |
| Measles .....                 | 29    | 39   | 12             |
| Poliomyelitis .....           | 68    | 28   | 18             |
| Encephalitis .....            | 2     | 0    | 0              |
| Chickenpox .....              | 1     | 9    | 13             |
| Typhus fever .....            | 0     | 0    | 22             |
| Mumps .....                   | 12    | 23   | 22             |
| Cancer .....                  | 340   | 458  | 304            |
| Pellagra .....                | 6     | 4    | 3              |
| Pneumonia .....               | 45    | 88   | 108            |
| Syphilis .....                | 123   | 181  | 1226           |
| Chancroid .....               | 8     | 3    | 19             |
| Gonorrhea .....               | 307   | 333  | 566            |
| Rabies—Human cases .....      | 0     | 0    | 0              |
| Positive animal heads .....   | 26    | 32   | 0              |

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

## PROVISIONAL BIRTH AND DEATH STATISTICS FOR AUGUST 1952 AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                             | Number<br>Registered<br>During<br>August 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|---|---|-------|---------|--------------------------|-------|-------|
|   | Total   | White | Colored | 1952                     | 1951  | 1950  |
| Total live births .....   | 7587  |       |         | 28.6                     | 28.7  | 29.2  |
| Total stillbirths .....   | 182   |       |         | 23.4                     | 26.0  | 24.3  |
| Deaths, stillbirths<br>excluded .....   | 1895  | 1134  | 761     | 7.1                      | 8.1   | 7.8   |
| Infant deaths:<br>under one year .....  | 229   | 107   | 122     | 30.2                     | 32.8  | 34.0  |
| under one month .....   | 170   | 86    | 84      | 22.4                     | 23.4  | 24.9  |
| Cause of Death  |   |       |         |                          |       |       |
| Tuberculosis, 001-019 .....   | 47  | 22    | 25      | 17.7                     | 25.0  | 26.5  |
| Syphilis, 020-029 .....   | 12  | 5     | 7       | 4.5                      | 1.1   | 5.0   |
| Typhoid and paratyphoid, 040, 041 .....                                       |   |       |         |                          | 0.4   |       |
| Dysentery, 045-048 .....  | 3   |       | 3       | 1.1                      | 1.5   | 1.9   |
| Diphtheria, 055 .....   | 1   | 1     |         | 0.4                      | 0.8   | 0.8   |
| Whooping cough, 056 .....   | 1   | 1     |         | 0.4                      | 2.3   | 1.9   |
| Meningococcal infections, 057 .....   | 1   | 1     |         | 0.4                      | 0.8   | 0.4   |
| Poliomyelitis, 080, 081 .....   | 3   | 3     |         | 1.1                      | 4.9   | 1.5   |
| Encephalitis, 082, 083 .....  |   |       |         |                          | 0.8   |       |
| Typhus fever, 100-108 .....   |   |       |         |                          |       | 0.4   |
| Malaria, 110-117 .....  | 1   | 1     |         | 0.4                      |       | 0.4   |
| Malignant neoplasms, 140-205 .....  | 233   | 166   | 67      | 87.7                     | 79.7  | 92.5  |
| Diabetes mellitus, 260 .....  | 20  | 15    | 5       | 7.5                      | 11.0  | 8.4   |
| Pellagra, 281 .....   | 1   | 1     |         | 0.4                      | 0.4   | 0.4   |
| Vascular lesions of central nervous system, 330-334 .....                     | 215   | 123   | 92      | 80.9                     | 99.0  | 82.5  |
| Other diseases of nervous system, 300-318, 340-398 .....                      | 24  | 12    | 12      | 9.0                      | 11.4  | 6.9   |
| Rheumatic fever, 400-402 .....  | 3   | 2     | 1       | 1.1                      | 1.9   | 1.9   |
| Diseases of the heart, 410-443 .....  | 551   | 351   | 200     | 207.4                    | 254.2 | 217.5 |
| Diseases of the arteries, 450-456 .....                                       | 33  | 24    | 9       | 12.4                     | 9.5   | 6.1   |
| Other diseases of the circulatory system, 444-447, 460-468 .....              | 34  | 23    | 11      | 12.8                     | 9.5   | 12.7  |
| Influenza, 480-483 .....  | 6   | 3     | 3       | 2.3                      | 2.7   | 2.3   |
| Pneumonia, 490-493 .....  | 44  | 21    | 23      | 16.6                     | 20.1  | 26.1  |
| Bronchitis, 500-502 .....   |   |       |         |                          | 0.8   | 0.4   |
| Appendicitis, 550-553 .....   | 1   | 1     |         | 0.4                      | 0.8   | 2.7   |
| Intestinal obstruction and hernia, 560, 570, 561 .....                        | 11  | 6     | 5       | 4.1                      | 3.8   | 6.1   |
| Gastro-enteritis and colitis (under 2) 571.0, 764 .....                       | 14  | 4     | 10      | 5.3                      | 6.8   | 4.2   |
| Cirrhosis of liver, 581 .....   | 9   | 6     | 3       | 3.4                      | 3.8   | 3.1   |
| Diseases of pregnancy and childbirth, 640-689 .....                           | 11  | 6     | 5       | 14.2                     | 20.6  | 17.9  |
| Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684 ..... | 2   | 1     | 1       | 2.6                      | 1.3   |       |
| Congenital malformations, 750-759 .....                                       | 21  | 16    | 5       | 2.8                      | 4.9   | 3.2   |
| Accidental deaths, total, 800-962 .....                                       | 131   | 89    | 42      | 49.3                     | 61.1  | 69.1  |
| Motor vehicle accidents, 810-835, 960 .....                                   | 54  | 44    | 10      | 20.3                     | 31.1  | 25.7  |
| All other defined causes .....  | 381   | 200   | 181     | 143.4                    | 141.5 | 146.2 |
| Ill-defined and unknown causes, 780-793, 795 .....                            | 83  | 31    | 52      | 31.2                     | 37.9  | 39.5  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the August report of the years specified.

ANNUAL SESSION  
BIRMINGHAM  
APRIL 16, 17, 18, 1953

## BOOK ABSTRACTS AND REVIEWS

**Dynamic Psychiatry.** By Louis S. London, M. D. Vol. 1. Basic Principles. Cloth. Price, \$2.00. Pp. 98. Vol. 2 Transvestism, Desire for Crippled Women. Cloth. Price, \$2.00. Pp. 129, with 49 illustrations. Corinthian Publications, Inc., New York 16, N. Y., 1952.

These two slim volumes provide pitifully slim fare. Poorly written, deceptive in the promise of their titles, at times disjointed in continuity and whimsical in their content, they defy charitable review.

A disproportionate half of the first volume is consumed by a historical review of predominantly ancient and medieval attitudes towards insanity and its treatment. Without further transitional comment, the reader is abruptly immersed, ankle deep, in the "Meaning of Dreams," a chapter of eight pages, and some dated material related to libido psychology. There remains little to add after one quotes two footnotes: "Strictly speaking, electrons have no will." "With the advent of atomic energy the component parts of the psyche, including narcissism, may be divided."

The second volume is the report of a case of transvestism associated with anatomical defect and shoe fetishism. Fifty drawings by this patient of his fantasies demonstrating these deviations are presented and finally a brief analysis of the case is appended.

Philip S. Bazar, M. D.

**A Textbook of Clinical Neurology.** With an Introduction to the History of Neurology. By Israel S. Wechsler, M. D., Clinical Professor of Neurology, Columbia University, New York. Seventh edition. Cloth. Price, \$9.50. Pp. 801, with 179 illustrations. Philadelphia 5, Pa.: W. B. Saunders Company, 1952.

The seventh edition of one of the standard textbooks of neurology has been revised and brought up-to-date. It is an excellent book to be used as a guide for students as well as doctors who are away from medical centers. Those doctors are constantly faced with neurologic problems and it is believed that this clearly and concisely written book will assist in arriving at a satisfactory conclusion.

There are sections of particular interest to most doctors which cover epilepsy, neurosyphilis, meningitides, encephalitides and injuries of the brain and spinal cord. There is an up-to-date discussion of treatment.

There are a number of places in the text where differences of opinion may arise. However, the author is fair in his presentation of controversial subjects.

There is a section on the neuroses which will further assist the doctor to analyze his patients. It is not exhaustive but apropos for this type of text. There is also an excellent introduction to the history of neurology which all students of

the subject realize is a requirement for adequate understanding of neurology and its advancements.

It is unusually easy it is believed to locate specific information in this text and it would be helpful to a general practitioner as well as a specialist.

J. L. Bostwick, M. D.

**Untoward Reactions of Cortisone and ACTH.** By Vincent J. Derbes, M. D., F. A. C. P., Associate Professor of Medicine, Tulane University of Louisiana School of Medicine; and Thomas E. Weiss, M. D., Instructor in Medicine, Tulane University of Louisiana School of Medicine, New Orleans. Edited by Roscoe L. Pullen, M. D., Director, Division of Graduate Medicine, The Tulane University of Louisiana. Cloth. Price, \$2.25. Pp. 77. Charles C. Thomas, Publisher, Springfield, Ill., 1951.

This small book is a monograph in the American Lecture Series of Internal Medicine. It begins with a short chapter on the physiologic responses of the body to Cortisone and ACTH. A chapter is devoted to each of the various systems of the body, such as the musculoskeletal and cardiovascular, giving the untoward effects of ACTH and Cortisone on each; also a chapter is devoted to treatment of untoward effects.

Charles A. Willis, M. D.

**Manual of Electrocardiography.** By Benjamin F. Smith, Professor of Clinical Medicine, Baylor University College of Medicine, Houston, Texas. Cloth. Pp. 215, with illustrations. Elsevier Press, Inc., Houston-New York, 1952.

This is a small manual written primarily for the beginner and the student. The explanations are brief and to the point. Information derived from the CF and V leads are explained very clearly. There is a chapter on correlation of electrocardiographic and autopsy findings which does not give much information and seems to be out of place in a manual of this sort. It is a very good manual for the beginner in electrocardiography.

Charles A. Willis, M. D.

WANTED: PHYSICIAN FOR ALABAMA STATE MENTAL INSTITUTION. MUST BE LICENSED. SALARY \$6,600.00 to \$7,800.00. Write Dr. J. S. Tarwater, Superintendent, Alabama State Hospitals, Tuscaloosa.



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AMERICAN MEDICAL ASSOCIATION NEWS

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**RHEUMATIC FEVER RECURRENCES MAY BE PREVENTED BY NEW COMPOUND**

A new penicillin compound, not readily absorbed by the body and which may offer prolonged protection against recurrences of rheumatic fever, was described in the December 20 Journal of the American Medical Association.

The new repository compound is known as "bicillin." Tests have shown that after administration of a single intramuscular injection sufficient prophylactic amounts of the drug remain in the body for periods ranging up to four weeks, according to Dr. Gene H. Stollerman, Hastings-on-Hudson, N. Y., and Dr. Jerome H. Rusoff, New York City. Ordinary penicillin requires one to three doses daily to maintain proper protection.

The doctors pointed out that the new compound also may prove effective in the treatment and prevention of such diseases as pneumonia, gonorrhea, meningitis and syphilis.

"The problem of employing penicillin as a prophylactic agent is largely a practical one," the doctors stated. "Current methods for maintaining continuous prophylaxis with penicillin involve oral administration of relatively large doses, one to three times daily, with the patient in the fasting state. The success of such treatment depends largely on the patient's strict adherence to this regimen without interruption. In addition, only a fraction (about one-fifth) of the dose of penicillin administered is absorbed and the oral route is, consequently, costly and wasteful.

"If, however, penicillin could be maintained in the tissues for protracted periods by means of single injections given at infrequent intervals, parenteral administration should prove economical and practical.

"The data presented indicate that it is possible to maintain low serum levels of penicillin continuously in a high percentage of rheumatic children by relatively infrequent intramuscular injections of 'bicillin.'

"The demonstration of detectable amounts of penicillin in the serum of most patients for four weeks following the administration of 1,250,000 units of 'bicillin' suggests the

feasibility of maintaining continuous drug prophylaxis against recurrences by administration of single monthly intramuscular injections."

The doctors reported on a study of 135 children and eight adults who were known rheumatic subjects or in whom group A streptococci (one of the bacteria which may be implicated in causing rheumatic fever) were found and who were given the drug as a prophylactic agent.

Those patients who received 300,000 units of the new compound were found to have the "bicillin" in their systems seven days after an injection, those who received 600,000 units for 12 to 14 days, and those who received 1,200,000 or more units for as long as four weeks.

In addition, the doctors stated that a single injection of the drug controlled group A streptococci in the throats of 11 of the 13 patients in whom the organism was found. A second, larger dose eliminated the organism in the two remaining patients.

The doctors reported that the bacteria did not become any more resistant to the new compound than they did to regular forms of penicillin. Although the side-effects were somewhat severer than those found in the use of other penicillin compounds, further studies of the drug should be made, they added.

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**PERSISTENT HOARSENESS MAY BE DANGER SIGNAL**

Hoarseness can be dangerous.

Although hoarseness is a common unpleasantness experienced by everyone at one time or another, it can be a danger signal, according to Dr. Robert W. Ard, Hagerstown, Md. When it persists for more than two weeks, it may be more than laryngitis—it may even be cancer.

Hoarseness usually is a temporary voice defect associated with simple upper respiratory infections, Dr. Ard wrote in the current *Today's Health*, published by the American Medical Association.

"However," he added, "such infections aren't the only cause of hoarseness. Other diseases, notably cancer, tuberculosis and syphilis, may give rise to this voice difficulty."

# THE JOURNAL

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## GENITO-URINARY DISEASE AS A CAUSE OF NON-UROLOGIC COMPLAINTS

GEORGE C. POORE, M. D., F. A. C. S.  
Cleveland, Ohio

Genito-urinary tract diseases do not always present the traditional complaints of frequency, urgency, and burning on urination. These can be absent entirely or of such secondary importance in the eyes of the patient as for a time to be omitted in the history, even when the disease is already far advanced. The true diagnosis thus goes unsuspected until the case is thoroughly reviewed and each clue is carefully exploited. The purpose of this paper is to emphasize these urologic cases.

Because it is pain that most often brings the patient to the doctor in the first place, it is pain that we find to be the most readily available symptom on which to base our studies. Renal pain is dependent upon either congestive or edematous swelling of the renal parenchyma and/or hydronephrotic distention of the kidney pelvis. Cessation of this pain, especially when abrupt, does not necessarily mean improvement in the condition. It should be remembered that release of the tension can just as well occur with rupture of the viscus as with relief of the obstruction and a passage of the pent-up urine down normal channels.

Whereas mild renal pain remains localized to an ache in the area of the kidney and adjacent back, severer pain overflows the normal nerve pathways and radiates along the complex sympathetic connections of the

renal nerves. (See figure 1). The pain may be disbursed through the celiac ganglion to the abdominal viscera by the vagus nerve. It may then cause gastro-intestinal upsets, nausea, vomiting, diarrhea, or even, at times, vasomotor disturbances such as fainting, sweating, and collapse. If the stimulus is dispersed downward through the presacral nerve there may be reflex vesical or urethral disturbances, and occasionally testicular or ovarian pain. Conversely, pain in the testes or abdomen may initiate impulses in the reverse direction, the reaction to a severe injury to the testicle being a familiar case in point.

The pain of ureteral obstruction is similarly caused by distention of the ureter and kidney pelvis above it, for these tissues have no other sensation, such as heat or cold. This pain differs from the ache of renal pain in that it tends to be stabbing or intermittent in character. This may be explained by the fact that waves of exaggerated peristalsis increase the internal pressure of the ureter and renal pelvis in a rhythmic fashion in their vain effort to force the urine past the obstruction. This persists for a long time in the partially obstructed case, gradually diminishing as the overtaxed ureteral musculature becomes stretched and more and more ineffectual in its contractions until, in the extreme case, both ureter and kidney are but a dilated sac. Contrast this with the effect of the complete obstruction that follows ligation of the ureter, or a sudden complete block of the ureter by calculus. When the hydrostatic pressure in the ureter behind the block gets so high that the kidney secretory pressure is equalized and the organ no longer secretes urine, the ureteral

From the Euclid Clinic Foundation, Glenville Hospital, Cleveland.

Read before the Fifth Annual Assembly, Alabama Surgical Division, United States Section of the International College of Surgeons, with the Alabama Academy of General Practice and the Montgomery County Medical Society, Montgomery, October 9, 1952.



musculature becomes more quickly paralyzed. The pain subsides and the kidney loses its secretory function without any dilatation of its ureter or pelvis. Urograms taken soon after the block may demonstrate it, but later no dye enters the pelvis in sufficient concentration for a radiograph.

When the obstruction to the ureter is high, ureteral pain originates in the outer upper loin of the affected side, radiates down the course of the ureter, and via the genitocrural nerve may cause pain in the testis or ovary. By ilio-inguinal reflex there may be hyperesthesia of the skin of the upper inner thigh of the same side so that when this area is pinched a severe cutaneous pain results. When present this may differentiate a genito-urinary condition from an acute biliary, appendiceal, or other intra-abdominal condition. By intraspinal overflow the contralateral side may give pain also, the so-called reno-renal reflex. The visceromotor reflex may cause retraction of the testis from cremasteric stimulation via the genitocrural nerve. Occasionally some degree of abdominal rigidity may be encountered.

Lower urinary tract pain is often confusing, too. In the words of C. Gordon Johnson: "Unfortunately, it is too often customary to regard all feminine pain located anatomically between the umbilicus and the perineum as originating in the generative apparatus, especially if it is associated with or exaggerated by menstruation." Statistically, Gueriere studied 1100 cases with apparently gynecologic pain, of whom 204 had urologic causes for the pain. Although 75% of this series of urologic cases had posterior urethritis, other interesting causes appear from time to time.

Pain, however, is not the only symptom of importance. Occasionally there is a painless enlargement of the kidney of long duration, as in some tumors or hydronephroses. In these cases, extrarenal symptoms occur, largely due to the effect of the renal mass enlarging laterally and forward. In the case of a hydronephrosis due to ptosis, plus a vessel at the ureteropelvic junction, the mass may not be felt if the patient is not examined promptly for this. When the patient lies down, the kidney falls back into place, the ureter straightens out and the obstruction due to the kinked ureter unblocks. In a matter of minutes the cystic mass collapses and is no longer palpable, even if the patient is examined afterwards in the erect

position. If the patient is examined standing before lying down, and at a time when there is pain, or preferably if erect pyelograms are taken, the true condition can be demonstrated with exactness.

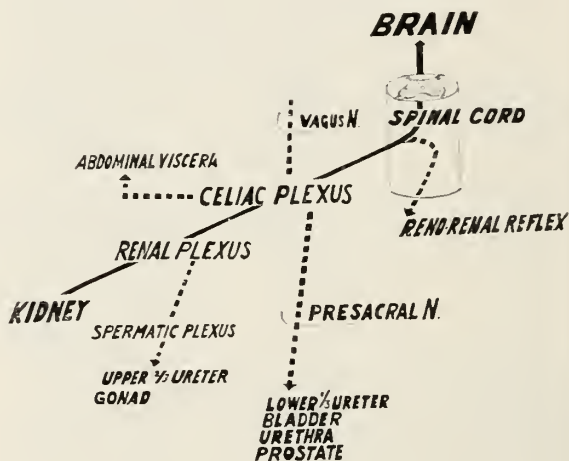


Fig. 1

Solid tumors of the kidney and adrenal form a large part of the retroperitoneal tumors seen. They not only enlarge the abdomen but also give rise to systemic manifestations suggesting blood dyscrasias or acute abdominal conditions, according to Snyder and his associates. They may confuse further by being relatively movable on their pedicles, which is, as a rule, felt to mean an intra-abdominal mass, a supposition quite unwarranted.

Of a series of 150 cases of nephroptosis, most of which might be palpated as movable abdominal masses, Dr. Jos. C. Birdsall writes: "45 patients had complained of various degrees of nausea, eructation of gas, vomiting and symptoms indicative of colitis. These symptoms may be due to the mechanical pull of peritoneal attachments to the biliary duct, duodenum, and colon, or through the viscerovisceral reflex arc." And again: "Neurological symptoms play a very prominent part and were present in 30 patients. The findings of Suckling, the famous English neurologist, in the case of nephroptosis are most interesting. He studied 325 patients with movable kidney and his results were corroborated by operative findings. In 48 of his cases of various types of insanity which were operated on for movable kidney, 43 of the patients completely recovered. All their neurological symptoms were those commonly attributed to neurasthenia. This type of patient is easily fatigued, indigestion is prominent in the picture, he or she is irritable, poorly nourished

in many instances, and has a pessimistic outlook on life in general. Five of the writer's (i. e. Suckling's) patients were hypochondriacs, two suffered from an advanced neurosis, two from psychasthenia, and two had a marked form of hysteria."

Nor are these problem cases confined strictly to the urinary tract. Recently Dick reported his experiences with sixteen cases of silent prostatism. Over a 6-year period six of his cases had gastro-intestinal complaints of nausea, vomiting, and constipation; two others seemed to have the symptoms of anemia; three more had a suprapubic mass; and the remaining five had mild urinary tract symptoms elicited only in the course of study for disease of other systems. None of the 16 men thought but that they were passing normal amounts of urine without unusual difficulty. Their urines were even clear and sterile, giving no indication that the urinary tract was the source of the trouble; and, incidentally, the finding of a normal urine is quite possible in serious advanced upper urinary tract disease if there is total obstruction of the ureter below the seat of the pathology.

Cases of almost silent prostatism are not as rare as these cases reported by Dick. From time to time there are seen hernia and hemorrhoid cases with urinary complaints so mild as to be ignored by good clinicians in the face of obvious surgical disease. Only when these hernias break down or the hemorrhoids promptly reappear in spite of most excellent surgery is the underlying major cause sought out and corrected. A cure then follows.

Then there are the not uncommon problem cases with a recent genito-urinary clearance. These patients have had urologic disease with a successful operation. The proof is demonstrated by recent follow-up x-rays. Shortly thereafter the symptoms recur, leading one to believe the cause might not have been urologic in the first place. A thorough survey is still essential, for urologic conditions have a way occasionally of reappearing with surprising rapidity, particularly the soft type of urinary calculus.

#### REPORT OF CASES

By way of illustration I would like to give a few case reports.

1. K. F. S. was first seen at age 66 in May 1950 with a chief complaint of internal and external piles. He had lost 22 pounds weight

in the preceding 6 months and had noted occasional diarrhea. The blood pressure was normal, there was no hernia, and he worked every day as bank guard, standing for long hours. There was no dysuria or impotence. As the general surgeon found the prostate not remarkable for a man of this age he naturally did a hemorrhoidectomy and expected a good result. However, in March of 1951 the patient returned again with gastro-intestinal distress. An intravenous urogram was ordered at this time and showed intravesical enlargement of the prostate and a little unexplained calyectasis of the lower part of the right kidney pelvis. As there were again no urinary complaints the patient was simply given prostate massage.

I first studied the patient in January 1952 two years after his development of hemorrhoids, and one year after his gastro-intestinal pain symptom complex. This pain was persistent, not very severe, but present much of the time. It was at this time mostly burning in the stomach area and gas. He had nocturia, 3 times, which now he said had been present for the two years, and 2 new symptoms, a right indirect inguinal hernia and hematuria. The prostate was examined and found to be enlarged rectally to second degree, boggy and symmetrical, with no evidence of cancer. On cystoscopy 3 ounces of residual urine were found, and engorged bleeding vessels were seen.

In the light of the now proved obstructive signs of the prostate he was referred to the hospital for prostatectomy. Although the veins of the prostate seemed to be the cause of the hematuria, in view of a previously negative urogram, it was decided to repeat it for progress note on the calyectasis and for an estimation of the renal function. A filling defect of the right kidney pelvis had developed. It took a transurethral resection of the prostate gland and a right nephro-ureterectomy and herniorrhaphy to cure his "gastritis." He has had no complaints since.

The kidney tumor was small and confined to the renal pelvis, without extension to the ureter, which was, however, the seat of a mild infection. Whether this or the prostate caused the gastric symptoms is a moot question.

2. K. G. presents another phase of this problem. She was first seen on June 4, 1951 at age 7 complaining of stomachaches. First noted two years before, they were recurring at infrequent intervals. Shortly after her



sixth attack she consulted a pediatrician and it was found the attacks came on at various times of the day and night, lasted a half hour or so and finally were relieved by emesis. Her appetite had been fair, and though slight of build her growth was considered normal. The past and family history were irrelevant.

The examination showed a slender, alert, pale girl. The blood pressure was 118/74; the head, chest, and abdomen were normal except for slight tenderness in the left upper quadrant of the abdomen. Shortly after being admitted to the hospital for study she developed a typical attack *during which* there was palpated a mass medial to the left kidney. Urinalysis, complete blood count, chest x-ray and electrocardiogram were normal. The barium study of the stomach showed a filling defect of the lesser curvature suggesting extrinsic pressure. The urogram was then taken showing a hydronephrosis of the left renal pelvis, confirmed by retrograde pyelography to be of over 100 cc. capacity and capable of forming the defect in the stomach shadow.

She was operated on through a curved lumbar incision and the exposed kidney was found to have a ureteropelvic obstruction caused by a large vein accessory to the lower pole of the kidney. This vein was the sole support of the kidney, and as the kidney fell in the erect position it angulated the ureteropelvic junction over it, causing the intermittent obstruction necessary for so extreme a hydronephrosis to develop. As the other kidney was normal and this one so nearly destroyed it was removed.

The girl has put on flesh, eaten well and has had no further gastro-intestinal upsets. She may be considered a fine result.

3. A. R., a 38 year old white female, was referred to the hospital by an internist for recent chest pain. A minor complaint was right lower abdominal pain of many years standing, exaggerated by exertion, and associated with ankle edema in the late afternoon and evening. She had gone through two pregnancies safely and had had no operations.

Blood studies, chest, stomach, and gall-bladder x-rays were normal. An intravenous urogram was reported to show ptosis of the right kidney and a non-functioning left kidney. Gynecologic consultation noted a fibroid, and an anteverted, somewhat enlarged uterus.

I was called in to evaluate the renal status and on review of the urograms I took issue with the report of the roentgenologist. Inasmuch as the x-rays were taken in the recumbent position the kidney was more likely to be ectopic to be located at the brim of the pelvis, and also with the twisted calices it could represent one half of a horseshoe kidney, the other half being masked by the bony shadows. I advised retrograde pyelography, which showed the true condition. Inasmuch as the bladder was normal and the kidneys functioning well, and also as she was through having children, it was felt that hysterectomy might be the procedure of choice. It would relieve the trauma to the kidney and the ensuing pain, yet would involve a simpler operation with no loss of useful tissue. This was done with an excellent result. The kidney incidentally was explored at operation. It had many aberrant vessels, was plastered to the sacrum, and would have posed a formidable operation by comparison, so the hysterectomy really was a happy solution.

4. R. G. was referred to me as a possible neurotic case in which every likely organic disease was being corrected first. Her chief complaint on admission was tenesmus and burning in the rectum, associated with diarrhea. Her secondary complaints were moderate right sided pain and tenderness, pain in the lower back, abdominal cramps and ankle edema. The present illness had begun with the onset of vomiting, diarrhea, and rectal tenesmus after a picnic. She had chilly sensations, malaise, and a dry mouth. There were no bulbar signs of food poisoning and the stool showed undigested food particles and traces of blood.

The past history was a long one of back pain and stomach distress for which she had consulted a number of doctors without lasting relief. She had had medical treatment, a hysterectomy 7 years before, and gastrectomy 3 years ago. She had a sense of fullness, with nausea, accompanied by headache and perspiration after meals. She felt weak and tired much of the time.

The examination showed a thin, malnourished middle-aged woman. On admission her temperature, pulse and respirations were normal. The blood pressure was 140/92. The head and eyes were normal. There was no general glandular enlargement, and the chest and its contents seemed normal. The abdomen, however, was tender all over,

especially in the lower half. The kidneys were palpated far below their normal position and were tender to pressure. The liver and spleen were normal. As a result, she had been admitted for "acute gastro-enteritis with a dumping syndrome." The laboratory reported no amoeba in the stool; blood chlorides 601.5, protein 7.88, albumin 4.84, globulin 2.54, with a ratio of 1.5. Serology was negative. RBC were 4.7 million, WBC on admission 14,000, with 84% polymorphonuclear leucocytes and no eosinophils; two days later 6,000 with 65% polymorphonuclears, 30% lymphocytes, 3% eosinophils and 2% monocytes. The hematocrit was 38% and the blood O Rh positive. The urine was normal. On admission she was given intravenous glucose, streptomycin  $\frac{1}{2}$  Gm. t. i. d., papaverine gr. 1 by hypodermic for pain, and paregoric drams 1 for the diarrhea, and she improved. Sigmoidoscopy was normal. Intravenous urogram showed the extreme ptosis and a rotary scoliosis of the spine. Because of the ptosis and the back pain I was asked to evaluate her condition. Cystoscopy was done and specimens of urine were collected from each kidney. It was shown there was no defect of the tract other than the dilatation of the ureters and pelvis secondary to the poor drainage in the ptotic kidneys, the left kidney descending 8 cm. and the right 7 cm., bringing the kidneys to the brim of the pelvis in the erect position.

A bilateral nephropexy was suggested and done at one sitting, taking a little over an hour of operating time. She had the usual postoperative discomfort of these patients, with nausea and distention and incisional pain. However, after she began to get up, she was much better. One year after her operation she is well and happy, does her own housework, is gaining weight, and strength, and seems cured.

5. J. V., an 80 year old white male, was well up to 1 week prior to his first visit when he developed, what seemed to him to be, acid indigestion. There was pain in the upper abdomen, dull in character, lasting sometimes all day but never acute or crampy. There was no vomiting and the bowels moved well. There were no black or bloody stools. He had no food idiosyncrasies or weight loss. He had no genito-urinary symptoms except urgency when he had to urinate. He had no nocturia at all, no frequency by day, and seemed to pass normal quantities of urine when he voided.

He had been in Mt. Sinai Hospital  $2\frac{1}{2}$  years ago for a heart attack which kept him there 6 months, but since then had been well until he developed shortness of breath 1 month prior to admission. He had to sleep on one pillow and had cramps in the legs on walking. He had gonorrhea and lues as a boy of 20, at which time he was treated and supposedly cured.

His examination showed him to be afebrile, apparently well preserved, and younger than his stated age. The lungs were clear. There was a systolic murmur over the heart. Blood pressure was 200/90. The abdomen was distended with a spherical mass in the mid-line from umbilicus to symphysis pubis, which was dull to percussion. The knee jerks were hyperactive and the Romberg was negative. He was asked if he wanted to void and he said he did not need to but could. He voided 3 ounces of clear urine in a good stream easily. He said he could pass no more, but the mass persisted. The prostate was second degree by rectal examination.

He was therefore catheterized and 1500 cc. withdrawn to his great surprise, and incidentally the relief of the abdominal symptoms. He was advised to go to the hospital but delayed as he felt so much better. However, with the refilling of the bladder he was back where he started so he entered the hospital the next day.

At the hospital the blood urea nitrogen was 22 mg.% and the other blood and x-ray studies not remarkable other than for the 4 plus Wassermann of the blood. He has had a transurethral resection of the prostate and has been placed on constant drainage of the bladder in order to attempt shrinkage of the bladder while he gets a rapid treatment of his syphilis with penicillin. In six months he has had no further indigestion and no more heart attacks.

6. P. F. C., an apparently healthy young man of 20 years, was first seen with acute pain in the right lower quadrant on Oct. 9, 1943. He was thoroughly studied and diagnosed by urogram as having a right ureteropelvic calculus 1 cm. in diameter apparently acting as a ball valve and beginning to cause back pressure and hydronephrosis. A ureterolithotomy was done and the case checked by x-ray a month after the operation. The film of 28 November showed no calculus and the patient felt fine, and passed normal urine.



In January 1944, about 1 month after x-ray, he again reported a recurrence of his pain. In the light of the normal x-rays the question was raised that perhaps there was some other cause this time, an appendix perhaps. However, a urinary system check-up was done as a follow-up just to make sure. It showed the stone had recurred at the site of the scar in the ureter.

He was subsequently reoperated upon with excision of the scarred ureter with a good result.

#### SUMMARY

1. The fact that genito-urinary pain may simulate that of medical, surgical and gynecologic conditions is explained on a basis of the innervation of the urinary tract.

2. Silent disease of the urinary tract is shown to cause protean symptoms apparently unrelated to the disease, but explicable on a basis of pressure of a mass on vital organs or on a basis of straining to overcome obstruction to the urinary flow.

3. Several illustrative cases are reported.

#### CONCLUSION

In an appreciable number of cases, as high as 18% in one series, non-urollogic symptoms were caused by genito-urinary tract disease and therefore urologic examination and study are warranted in diagnostic problem cases of the abdomen.

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States are incapacitated temporarily by these headaches. About 50 per cent of the children of parents with migraine are subject to this type of headache.

The attacks are precipitated by worry, excitement or fatigue, are commonly associated with the menstrual cycle, but are unlike the gynecologic vascular headache occurring during menstruation, which is a reflex from a pelvic disorder. It is a prevalent headache, affecting about 8 per cent of all patients. Its characteristic vascular throbbing, with a variable period of relief between attacks, differentiates it from the closely similar histamine cephalalgia.

Migraine starts with an aura in 10 per cent of cases, is unilateral at the onset, but becomes generalized and may be associated with irritability, depression, nausea and vomiting, constipation or diarrhea, and polyuria. The aura may be visual in type, as bright flashes, moving scotoma, or photophobia; or emotional with euphoria, hyperesthesia, or auditory hallucinations. The aura is caused by vasoconstriction of the intracranial cerebral arteries. It may last a few hours to several days, and the patient appears extremely ill. The migraine attack is caused by vasodilatation of the branches of the external carotid arteries.

Personality features and reactions dominant in persons with migraine are feelings of insecurity, with tension manifested by inflexibility, conscientiousness, meticulousness, perfectionism and resentment, which date back to their early childhood. In short, certain persons have a predisposition and the psychobiologic equipment which make them prone to certain pernicious emotional states. The emotional state of the patient affects the autonomic nervous system.

Any vasoconstrictor that can decrease the amplitude of pulsation by 50 per cent relieves the headache, provided it is given early. The ineffectiveness of vasoconstrictors late in the attack is due to edema of the vessel wall.

Lieder believed that hypersensitivity assumes a major role in causing migraine and that, in prophylaxis, identification and elimination of offending allergens, usually food, are important. In 28 of 52 patients with migraine he found definite evidence of food allergy.

The textbook migraine syndrome is characterized and differentiated from other chronic headaches by these special features: periodic, recurring, but definite attacks, often associated with nausea, vomiting, vertigo, visual disturbances, chilliness, pallor and tremor. Psychic disturbances are also common during the migraine attack. The attack is usually unilateral in onset, but may become generalized, and there is freedom from symptoms between attacks.

Wolff stated that the migraine headache attack is but one aspect of a diffuse disturbance in function occurring periodically during or immediately after a period of stress, and these psychogenic factors are as important as the somatic. It is treated with ergotamine tartrate, bed rest, dark room, and sometimes prolonged warm baths.—*Lischkoff, J. Florida M. A., Jan. '53.*

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**Migraine**—Allergy is an important factor in migraine. It is one of the commonest periodic headaches, occurs in the first or second decade of life and is unilateral in character. It has been estimated that twelve million Americans have migraine and two to eight million in the United

# TREATMENT OF CHRONIC CERVICITIS

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Chronic cervicitis is perhaps the most common of all gynecologic diseases and is the most frequent cause of leukorrhea. While it may represent the residual phase of gonorrheal infection, it is most frequently due to infection by other organisms found in large numbers in the lower genital canal, especially the streptococcus and the staphylococcus. The intimate relationship of the cervix to contiguous structures easily explains the spread of the infection and the re-infection of the pelvic organs, vagina, and the urinary tract (figure 1). It is also a

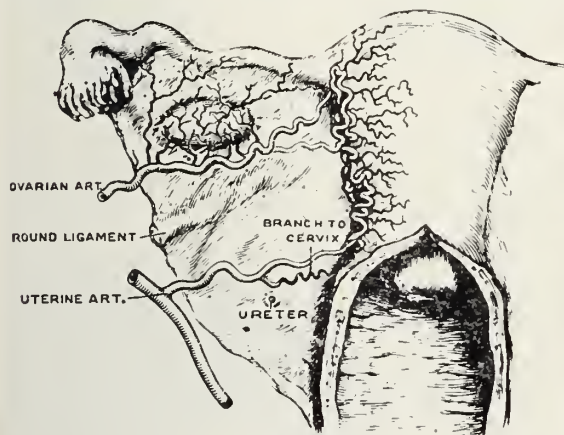


Fig. 1

causative factor in systemic infections and this must be borne in mind constantly.

The symptoms of chronic cervicitis are many, such as dysmenorrhea, painful sex relations, pruritis, dysuria, and sterility, but the following are the most common: leukorrhea, backache, pain in the back, and nervousness. The last symptom, nervousness, is very common and its relationship to the infected cervix is frequently overlooked.

The diagnosis of cervicitis is easily made by visual examination with the bivalve speculum (figure 2). There are two types of the disease, acute cervicitis and chronic cervicitis. In acute cervicitis the cautery is contraindicated and, preferably, no type of local application should be used. Penicillin and streptomycin are given parenterally daily, with vaginal application of Westhiazole Creme, which the patient inserts nightly by means of the single dose applicator.

Read before the Association in Annual Session, Montgomery, April 17, 1952.



Fig. 2

This paper involves chiefly the treatment of the chronic type of cervicitis, and this may be divided into three groups: (1) the nulliparous cervix with superficial infection; (2) the residual stump following supravaginal hysterectomy; and (3) the chronic, lacerated and eroded cervix with infection, present in parous women. The nulliparous type involves mainly the outer part of the cervix with superficial infection; it bleeds easily and does not involve the deeper structures. This type of cervix may be treated effectively in the office, with linear cauterization or some form of topical application, plus the use of Westhiazole Creme. Frequently in this type of infection the hymen is intact and must be ruptured for proper treatment of the cervix. The residual stump following supravaginal hysterectomy has been put into another group because the physician can and should be much more generous in his conization. Cervicitis in parous women is, of course, of different types and



the operative procedure varies. Many types of local office treatment and applications are used and have been advocated. In this paper I expect to stress particularly the operative type of conization which I have found most effective and gives the best results.

The conization should be done just after menstruation, if possible. The patient is hospitalized for 24 hours; Pentothal anesthesia with curare is given so that there will be complete relaxation. Very careful pelvic examination is made; the position of the uterus, and the results, are recorded both on the operative and office record. You will notice from figure 3 the different areas in



Fig. 3

which malignancy develops in the fundus and cervix. Prior to conization, biopsies are taken from the cervix and also from within the cervical canal. If there is any question of uterine pathology, then a diagnostic dilatation and curettage should be done. If one is careful and gentle in doing this, small submucous fibroids can frequently be located with the curet. The length of the cervical canal is roughly one inch and the operator should always stop the conization this side of the internal opening. I try to remove a generous cone but at least 30 to 40 per cent of the cervical tissue should be left, because, if too much is removed, the patient will develop a stenosis, sometimes so bad as to require a secondary hysterectomy (figures 4 and 5). This is important, not only in women who are menstruating but also in those who have had the menopause, so that the symptoms indicative of disease of the fundus, such as malignancy, will not be readily overlooked because there is no outlet for the drainage.

Treatment should be divided into immediate, operative treatment, and office, or post-operative treatment. A Cameron bakelite speculum is used; and a rubber condom,

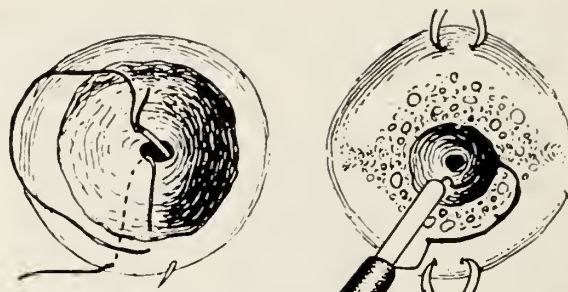


Fig. 4

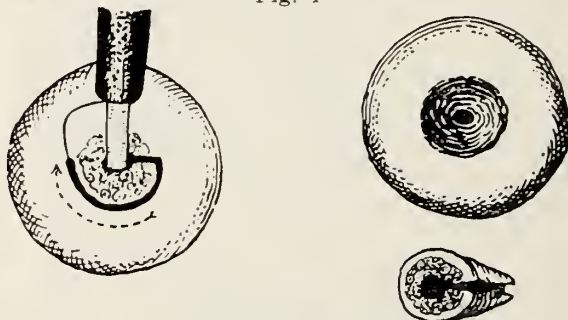


Fig. 5

with the end cut out, is slipped over the speculum to prevent any burn of the vaginal mucous membrane (figure 6). In the upper



Fig. 6

blade of the speculum a small tube is incorporated and connected to suction, which keeps the field free of smoke at all times, and is very helpful in cauterization operations on the cervix. As a rule, one does not need to use the tenaculum except at the end in packing the cervix. I use a headlight, which not only gives an excellent view but allows freedom of both hands. The current is turned on before the conization instrument is placed in the cervical canal and the diseased endocervix is then coned out by rotating the instrument through 360 degrees. Do not release the foot switch until the electrode has been withdrawn from the external os. If the current is cut off while the conization instrument is still within the cervix it is rather hard to remove the part that has

been coned out, if it was not complete, and may cause bleeding.

It may be necessary to repeat this conization procedure several times, especially in the badly lacerated cervix, and one must be sure that not only has all diseased tissue been removed but that the cervical opening is round and symmetrical. I seldom pay any attention to bleeding within the cervical canal. However, one should be sure to check bleeding points around the border of the remaining cervix, being careful to limit tissue destruction since too much sloughing will delay healing.

The cervix is then packed rather tightly with sterile cotton saturated with 2% aqueous gentian violet and a sponge placed in the vagina. At the time of operation the patient is given a gram of streptomycin subcutaneously and this is repeated the next day before the patient is dismissed. When the patient leaves the hospital the sponge should be removed but the packing is left in situ until she returns to the office, which should be in five to seven days. When the patient returns, the packing is removed and another piece of sterile cotton saturated with 2% aqueous gentian violet is put back into the cervical canal. One gram of streptomycin is given. This is repeated again in five days. On the third visit I usually leave the packing out. Seldom, after two weeks, is there any danger of cervical hemorrhage. The application of this pack reduces infection and odor, and since using it has prevented all secondary hemorrhage. Recently I have advised all patients to use the Westhiazole Creme at bedtime. There have been numerous contributions to the literature by such men as Siegler, Stein and Karnaky who feel that the use of this agent in an acid base hastens the healing time.

The cervix requires from five to eight weeks for complete healing. At the end of this time the patient is brought back to the office and the cervical canal dilated. It is important to have on the office record the position of the uterus since, occasionally, dilatation is difficult and certainly the doctor does not want to push his curet in the wrong direction. The cervix will need to be dilated once or twice after this and the patient should be instructed to report back, even after she is discharged, if she has trouble with menstruation. Occasionally, after

months, it may be necessary to do another dilatation of the cervix.

I became interested in the treatment of the infected cervix because I felt that by ridding the patient of the infected area I could relieve her of many symptoms, locate early malignancy, and, by clearing up the cervix, prevent the development of cancer.

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**Abdominal Injuries**—Whenever severe injury is sustained to any intra-abdominal viscus there is practically always a reflex inhibition of intestinal peristalsis. This is prone to occur at or very soon after the time of injury and it continues for a variable period, according to the extent of the trauma. Usually when a perforation or rupture of a hollow viscus has been produced with consequent discharge of its inflammatory content into the peritoneum, the peristalsis diminishes with the increasing inflammatory reaction. Even in the event that no intraperitoneal discharge of visceral content or hemorrhage has occurred, contusion of the viscera may produce the same effect. In any instance, therefore, of potential intra-abdominal injury, the activity of the peristalsis should be continuously observed, for its absence taken in conjunction with other findings is a very significant sign of visceral injury. It should not be forgotten that retroperitoneal hemorrhage may produce the same picture. In rupture of the kidney, of course, the hemorrhage is mostly retroperitoneal and the reflex inhibition of peristalsis which is produced is indistinguishable from that which occurs in a true intraperitoneal injury.

Therefore, it may be fairly said that the principal decision confronting the physician is whether or not sufficient injury to the contained abdominal viscera has been sustained to warrant exploration. In any instance of injury in which the abdomen is doubtfully involved, it is imperative that, in addition to constant observation, supportive treatment be carried out in the same manner as it would be carried out in the event that injury actually existed. If this plan is followed, no time will be lost should trauma later be proven to be present. In instances of abdominal injury in which after a period of close observation and treatment the examiner cannot be sure as to whether or not visceral damage exists, the performance of an exploratory laparotomy is mandatory. The rationale of this course is apparent from the fact that the chances for survival, in most individual cases, are far better if a laparotomy is performed which yields negative findings than if severe intraperitoneal hemorrhage or spreading peritonitis is missed through excessive caution on the part of the physician. Once laparotomy is undertaken the possibility of visceral injury remote from the site of application of the force must always be considered. This possibility makes it mandatory that a complete exploration of all the viscera be done, once an operation has been decided upon.—*Goodwin, J. M. A. Georgia, Jan. '53.*



## SADDLE BLOCK ANESTHESIA IN OBSTETRICS

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"Saddle block is a term used to designate a form of low spinal anesthesia. The term, low spinal anesthesia, usually implies that the areas supplied by the lumbar and sacral spinal roots are anesthetized. In saddle block, however, the lowermost sacral spinal segments, only, are involved and anesthesia is confined exclusively to the saddle area."

The author never uses the word spinal shot or spinal anesthesia to his patients in or out of the delivery room because of the apparent fear of spinal anesthesia among many. The term saddle block does not seem to elicit the same fear as does the term spinal block.

No particular effort is made to select the patients who receive saddle block anesthesia, although it is not given to every patient by any means. Every pregnant woman should receive all the pain relief possible consistent with safety for the mother and the fetus. Contraindications to saddle block anesthesia are (1) not wanted, (2) a history of meningitis, (3) a positive spinal fluid for syphilis, (4) an operation on the lumbar spine, (5) irregular or poorly established labor, (6) presenting part high in the pelvis, (7) shock or (8) an infection of the skin at the site of injection. There may possibly be other contraindications.

According to J. P. Greenhill the most common drugs in use today for saddle block anesthesia, with their relative potency, dose, and duration, without and with epinephrine, are given in the accompanying table.

Read before a meeting of the Northeastern Division of the Association, Huntsville, October 8, 1952.

These drugs have been subjected to variation in dosage and combinations with other drugs in an effort to improve or prolong the saddle block. The author's personal choice has been 5 mg. of Pontocaine prepared by Winthrop-Stearns in 6% glucose. This mixture comes in 5 cc. ampules, each cc. containing 3 mg. of Pontocaine. The author uses approximately 2 cc. of this solution and adds to it 0.5 cc. of Neosynephrine also prepared by Winthrop-Stearns. The Neosynephrine prolongs the anesthetic action of the Pontocaine and apparently decreases the fall in blood pressure associated with the saddle block.

The technique of administration is as follows: Unless the head is high in the multigravida, or unless there is an occiput posterior, or some other complicated presentation, when the cervix is 2, 3 or 4 fingers dilated in a multigravida depending on the activity of labor, and 3 to 4 fingers dilated in a primigravida, the patient is taken to the delivery room where the saddle block will be given.

A delivery table which can be elevated as well as lowered at the head is used. Everything to be employed for the administration of the saddle block is assembled on a single tray. A 20 or 22 gauge spinal needle is used, and a skin wheal with Novocaine carried out. It is necessary to use a short beveled, spinal Pitkin needle in order to lessen the trauma to the dura and also to make sure that all of the bevel is within the dura, otherwise some of the anesthetic agent will be deposited outside the dura. The author draws 2 cc. of the above mentioned Winthrop-Stearns solution of Pontocaine in 6%

| Drug                    | Dose                  | Glucose     | Duration (Hours)   | Epinephrine             | Duration With Epinephrine |
|-------------------------|-----------------------|-------------|--------------------|-------------------------|---------------------------|
| Procaine                | 75 mg. crystals       | 1 cc. 10%   | $\frac{3}{4}$ to 1 | 0.5 m. (0.5 cc. 1:1000) | 1½ to 2                   |
| Intracaine              | 50 mg. crystals       | 1 cc. 10%   | 1 to 1½            | 0.5 m. (0.5 cc. 1:1000) | 1½ to 2½                  |
| Tetracaine (Pontocaine) | 5 mg. crystals        | 1 cc. 10%   | 1½ to 2            | 0.5 m. (0.5 cc. 1:1000) | 2½ to 5                   |
| Dibucaine (Nupercaine)  | 2.5 mg. 0.5 cc. 1:200 | 1 cc. 10%   | 2 to 3             | 0.5 m. (0.5 cc. 1:1000) | 4 to 6                    |
| Metycaine               | 50 mg. powder         | 0.5 cc. 10% | 1 to 1½            | 0.5 m. (0.5 cc. 1:1000) | 1½ to 2½                  |

dextrose in a 5 cc. syringe and adds 0.5 cc. Neosynephrine—Winthrop-Stearns.

The patient is now assisted to a sitting position on the edge of the delivery table. She is asked to bend her head and shoulders, bow out her back and rest her head on the shoulder of the nurse. Her hands are crossed in her lap. The operator now paints her back with an antiseptic solution. A skin wheal is made with 2% Novocaine at the 4th lumbar interspace, unless it does not feel "easy," in which case the third is used. As soon as she has finished a contraction the spinal puncture is made. The needle is introduced through the skin, the ligamentum flavum and the dura. When there is a free flow of fluid the bevel of the needle is turned downward. The puncture and injection can usually be made between the end of one contraction and the beginning of the next. Should the puncture be a bit difficult and a contraction begin before the injection can be given, wait until it subsides. If the injection is made during a contraction, the anesthetic agent will be too widely dispersed, and motor nerve involvement may occur, which in turn may interrupt labor. When the syringe is attached to the needle, fluid is aspirated to make sure the needle is still in place. Never withdraw more than 0.1 cc. of fluid. Injection is made at a steady rate so that not more than 3 seconds elapse before the injection is complete. The needle is withdrawn immediately. The patient is allowed to sit up for 30 to 45 seconds after injection. She is assisted in lying down, with legs and body flat, and the head is elevated as high as possible by a firm pillow. This is to prevent a heavy solution from getting higher than T-10 and T-11.

The blood pressure is checked at intervals for the next 20 minutes. Frequently there will be a slight gradual drop in the blood pressure of from 10 to 15 points. After 10 or 15 minutes following injection the legs are elevated to the stirrups if delivery is imminent. This maneuver has the effect of giving the patient an autogenous transfusion of from 600 to 800 cc. of blood. This is the amount of blood believed to be held in the lower extremities as the result of vascular dilatation and loss of muscle tone. Ephedrine is seldom used but is always on hand.

The relief of pain is most dramatic. The patient will lie quietly immediately following the injection. The patient will say that her legs feel numb and heavy. The other

sign of a successful block is the complete relaxation of the external rectal sphincter and perineum. The patient will go to sleep provided she has had adequate premedication. The uterine contractions continue at about the same frequency as before the block. The mother has no desire to push unless instructed to do so. Most of the patients are delivered by outlet forceps. A few deliver spontaneously.

Almost without exception the babies cry immediately upon delivery of the head. The face is wiped clean and a rubber bulb is used to aspirate the nose and mouth. The writer proceeds with the delivery slowly. As the anterior shoulder stems under the pubis, 1 cc. of Pitocin is given. Then he waits until the uterus contracts, at which time the head is raised, and this allows the posterior shoulder to slip over the perineum. The remainder of the delivery is then accomplished, the cord clamped and cut, and baby handed to the nurse. Any physician who observes deliveries carried out under saddle anesthesia cannot help but be impressed by the benefits derived by the fetus. Transplacental narcosis that is the result of general anesthetic drugs is entirely lacking. The fetus is born undrugged unless preanesthetic sedation has been excessive or injudiciously timed. Almost 95% of the infants breathe spontaneously in less than one minute after delivery, which is a much higher rate than with other methods of anesthesia.

If the placenta has not separated and delivered within 10 minutes, it is assumed it will not do so spontaneously and preparations are made for its removal. Occasionally Crede's method used gently on the uterus is successful. There has been no difficulty in doing a manual removal of the placenta under saddle block in the few cases necessary. However, some will require supplemental anesthesia, and since the uterus is tense and irritable force must not be used.

The author's greatest satisfaction in saddle block anesthesia comes from the ease with which the episiotomy can be accomplished and repaired because of the profound relaxation of the perineum.

There is no hesitation toward repeating a saddle block that does not take, or giving a second block when the first wears out.

It is the writer's experience that saddle block gives complete anesthesia from 60 minutes to 120 minutes and perineal anes-



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#### CONCLUSIONS

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#### ANNUAL SESSION

APRIL 16, 17, 18, 1953

BIRMINGHAM

## OBSERVATIONS ON THE MECHANISM OF GLAUCOMA AND LENS NUTRITION

JOHN A. KEYTON, M. D.

Dothan, Alabama

For centuries ophthalmologists have pondered the causes of glaucoma, and many interesting theories have been developed regarding this dreadful but fascinating clinical entity.

It was noted by this observer, many years ago, that a glaucomatous eye of the malignant type, one in which enucleation seemed to be the only method of giving the patient relief from the intractable pain, lost its hypertension after the bulb was freed from the capsule of Tenon and just prior to the section of the muscles and the nerve. This observation led, of course, to further speculation and conjecture regarding the mechanics of glaucoma, and a satisfactorily wide investigation of the available literature on the subject left one with the feeling that Stellwag was essentially correct in his hypothesis but he failed to go far enough in his theorizing to account for the phenomenon in its entirety.

To enter into a complete discussion of a theory that is so well known to all ophthalmologists would necessarily require more time and space than can be devoted to it, especially since the theory is readily available in its original form.

One of the first things noted in the observation of glaucoma is that arterial hypertension always accompanies the disease. It may be that we miss the hypertension in some individuals because we do not make the necessary determinations of pressure often enough to find the hypertensive state, for it is well established that even chronic hypertension has periods of recession in which this entity is apparently cured or is in a period of remission.

In operations on the bulb, in attempts to cure the pain of the disease, we too often find failure awaiting the finality of our efforts and must then resort to other and more drastic measures, usually to the procedure of enucleation of the offending eye.

Now let us again return to some of the tenets of Stellwag and try to develop them so as to meet the requirements of logical observation. In the first place the contents of the bulb are forced forward from the most

posterior portion of the bulb to the anterior, for we see the deepened "cup" which denotes that the choroid and the retina are both elevated above their normal level, since the nerve head is fixed and there is no choroidal lymph space beneath it. The vitreous is forced forward, making pressure on the ciliary muscle, the iris, and the lens structure with its suspensory ligaments. When this occurs then Schlemm's canal is at least partially closed so that drainage from the anterior chamber is obstructed and there is stasis there, presenting, at times, a more or less cloudy aqueous humor. This pressure causes a blocking out of the sympathetic fibers of the dilatatory mechanism of the iris as well as the contractile fibers, so that we find a dilated pupillary aperture, the result of mechanical pressure on a freely movable curtain being stretched over the anterior lens surface.

Some observers have insisted that there is occasional retraction of the iris and a deepening of the anterior chamber in certain cases of glaucoma but it is the opinion of the observer that these are simple cases of iritis in which the iris is so swollen that it partially obstructs the canal of Schlemm and therefore causes a building up of pressure in the anterior chamber which acts on the lens, forcing it back in its Patellerian fossa against the vitreous body, thus causing a transient disturbance in the posterior portion of the bulb, resulting in an increase of vitreous pressure and creating all the appearances of an acute glaucoma.

How often has the ophthalmologist been confronted with what he has considered a bilateral problem, that is, an iritis complicated with a simple glaucoma, when proper treatment of the iritis results in a cure of the seeming glaucoma. It is impossible for pressure to so build up in the bulb as to affect the root of the iris until it has created a pressure area over the ciliary muscle, which, in the *oro serrata*, divides the vitreous chamber from the anterior portion of the bulb. Constant pressure on the ciliary muscle will result in many vicious clinical signs and will ultimately cause a complete paralysis of the iris and thus further deprive



the anterior chamber of the required aqueous.

It is sincerely felt that no longer is the theory reasonable or tenable that closure of Schlemm's canal is connected with glaucoma, for since this phenomenon is directly caused by disturbance of the iris root or swelling of the ciliary muscle in the region of the root it will only close when pressure is brought to bear upon it from that pressure being exerted from posteriorward, as it is when the vitreous body is impressed with the encroaching subchoroidal stasis.

Kershner has made a very elaborate and comprehensive study of the orbital circulation but he has not satisfactorily explained the venous distribution or the venous and lymphatic return of the bulb itself. It is my opinion that there is a lymph stasis in the subchoroidal space because of some dyscrasia of the *venae vorticosae*, whether because of multiple thrombosis of these small veins or due to some gross disturbance with the sympathetic system regulating the lumen of these vessels and the increased arterial pressure accompanying the hypertension of the bulb. This lymph stasis exerts pressure uniformly on the vitreous body, thus thrusting this organ forward in all its meridians, causing the phenomena demonstrable in the anterior bulbar anatomy in the presence of this force.

Older observers were truly suspicious of this particular fact when they began doing posterior sclerotomies, for they were trephining the vitreous to give it an outlet underneath the conjunctiva and Tenon's capsule, which would aid in the relief of pressure over the vitreous, which would in turn release the small *venae vorticosae* allowing them to resume their drainage function, and also allowing the lymph to flow back into its normal channels.

The author has not done a root trephine, or Elliot operation, for many years, rather choosing the anterior sclerotomy and an excision of the consequent extruding vitreous, which has more satisfactorily given relief from the pain of the disease. Realizing that this was not enough I have attempted to relieve the pressure of the bulb, taking advantage of the fact that when the bulb is even partially freed from the capsule of Tenon the pressure subsides markedly and tends to remain in abeyance. I have operated on several eyes after this fashion and have not had a return of the glaucoma in any case thus treated.

At first I made an incision at the outer angle, carried a blunt dissector deep into the orbital tissue adjacent to the bulb, and placed a small gauze wick into this deep aperture, leaving it for twenty-four hours, then removing, thus attempting to set up a counter-irritative mechanism to oppose that of the bulbar interior. This operation promised good results but proved to be disappointing after a period of several weeks, or as soon as the irritative reaction disappeared from the operative site.

Now I incise the conjunctiva at a point between the insertion of the superior rectus and the external rectus muscles, lift up Tenon's capsule and, entering this small slit in the capsule, I sweep the surface of the bulb with a Freer blunt submucous dissector, thus freeing the surface of the bulb from the outer covering in a comparatively large area, for most of the bulb can readily be reached from this region. This procedure is immediately accompanied by a most dramatic fall in intra-ocular pressure, usually well below the normal, and I have not thus far seen any build-up of pressure to an alarming degree following one of these operations. This operation is not assumed to be a cure-all for all cases of glaucoma, for there are factors at work in nerve distribution which have thus far defied any observer who attempted to unravel these mysteries but I feel that the answer lies in the sympathetic nerve supply to the bulb, as well as to the orbital tissues generally.

Surgeons have taken advantage of the fact that anomalies of the sympathetic system will cause hypertension in the arterial tree by their repeated lumbar sympathectomies, which, while they are not always curative, do alleviate the distressing symptoms of hypertension for a period which varies in the individual. Upon one occasion, many years ago, we did a cervical sympathectomy on a patient who had an orbital tumor and watched in amazement as the tumor disappeared during the following weeks. This section of the sympathetic system was done on the fibers which are carried to their domain in the orbit via the internal carotid artery, which, when they are sectioned, deprive the entire orbit of any sympathetic nerve supply except those small fibers which may have been overlooked at the section of the nerve on the carotid sheath. The eye in which I did this lost so much of its tension that I was alarmed as to its function after the tumor disappeared but the

tension slowly returned to normal and so did the function of the iris and accommodation, which I assumed followed regeneration of the nerve fibers formerly sectioned.

Knies held that closure of the canal of Schlemm came about by the building up of anterior chamber pressure which caused the iris root to impinge on the canal, but this theory is untenable since we may safely inject enough fluid into the anterior chamber to set up a pseudo-glaucoma from increased pressure on the lens and vitreous body only to see the situation right itself within a few hours time, which means that function of the canal was not disturbed by this increased anterior chamber pressure.

In cases of very acute iritis we sometimes see a great increase in lymph excretion into the anterior chamber, more than we usually see in ordinary iritis, and in these cases there are frequently floccules of pus or other debris which must either be dissolved by the lymph or carried out bodily by the circulatory mechanism of the anterior chamber. Now if these matters are capable of being drained out by way of the canal of Schlemm then it is hardly probable that its function is ever seriously interfered with and that it resumes its function at once when it is so disturbed.

One of the first symptoms of glaucoma is disturbance of the refraction of the patient; that is, a patient who must have frequent refractions usually has some increase in intra-ocular tension and this must be fully investigated in such cases, else we are apt to observe sadly that we have a full-blown case of glaucoma on our hands suddenly. Since this is true it follows that there is a cause for this visual disturbance and this involves again the changes in the subchoroidal lymph spaces which cause elevations of the retina and choroid over their entire extent.

Not only does the change in pressure in the subchoroidal lymph spaces elevate the retina causing refractive changes but the anterior pressure on the lens also displaces this organ, causing further aberrations of the refraction.

One of the most frequent accompanying symptoms of glaucoma is the presence of lenticular opacification. This occurs always when the intra-ocular pressure is materially raised because of compression of the lens against the aqueous anteriorly and against the vitreous body posteriorly. Pressure on

the ciliary body gradually lessens its ability to bring about changes in the morphology of the lens, thus losing the accommodative power and changing materially the nutrition of the lens.

For many years we have believed that the lens derives its nutriment through the canal of Petit, which is practically air-tight, but which is filled constantly with pure lymph from the iris and the ciliary body. We cannot accept as fact, any more, the theory that the lens derives any sustenance from the aqueous, for it is our opinion that the layer of polygonal cells which underlies the capsule of the lens in every region in which the lens is subjected to contact with aqueous would seem to point to the fact that these cells are there to prevent the very thing from happening that some observers are sure does occur; that is, that aqueous is absorbed through the anterior capsule for lens nourishment. The crystalline lens is not in contact with aqueous except in its anterior aspect; the periphery and the posterior capsule are never in contact with aqueous and this organ is too large to derive all its nutriment from the aqueous. The ciliary muscle sets up a rhythmic contraction and expansion of the lens, thus by alternate positive and negative pressure causing nutritive lymph from Petit's canal to flow through the canalicular system of the lens just as the lymph of the corneal bodies nourishes the cornea.

No chemical analysis of the aqueous is identical with that of the lymph of Petit's canal nor is any chemical analysis of the lens substance identical with that of the aqueous, which would assuredly be the case if this fluid nourished the lens, for it does not remain in the anterior chamber long enough to lose any of its primary characteristics and would thus be identical in chemical content with the lens substance. When this rhythmic action of the ciliary muscle is interfered with from any cause, we see the lens becoming opaque, the accommodation is lost and the lens begins to swell, and only if this condition be quickly dispelled will the lens return to normal, for if its circulatory system be long distorted it will quickly undergo retrograde changes and we shall see a mature cataract very soon.

We speak of different types of cataracts but all cataracts are the same; there is only the difference apparent upon our first discovery that something has gone amiss with



this organ, for in the small central opacities of the lens we shall find that something has happened to the canals of this region which has caused a cessation of the flow of nutritive lymph, and so the tissue dies as does any other upon being deprived of its nutrient matter.

There is sure to be some argument as to the canalization of the lens but if whole sections are made of the bulb and through the various meridians of the lens we shall see not only that there is a system of canalization but some of them seem to be epithelized with a type of epithelium which seems akin to the endothelium of the blood vessels.

When one becomes old and his vessels incapable of carrying their normal load we find certain sclerotic changes taking place, not alone in the circulatory system but in the lens of the eye. So do we see also opacification of the crystalline lens in elderly people. Usually past the eightieth birthday everyone presents anomalies of the lens due entirely to a lessening of the power of the ciliary muscle just as are the other muscles of the body affected by these changes of age.

The rhythmic action I spoke of is certain, since in the young animal this action is even more pronounced, as he gazes about him, changing his accommodative power from near to intermediate to far distances and objects, the lens undergoes changes in its morphology and these gross changes cause more rapid interchange of nutrient fluids from the canal of Petit and a consequent better state of health of the lens.

The writer realizes that this is a very controversial subject, indeed that he has introduced two subjects for debate, but he also feels secure in his observations and feels that other observers will concur in his beliefs when they have devoted their time and attention to the matters in a deliberate way.

When one realizes that the posterior surface of the lens, which is the more convex, never comes into contact with any fluid of any type, in health, and that it is only after death that we find the fluid of Morgagni in the fossa underlying the imprint of the lens against the vitreous body, then one is more apt to accept the idea that this relatively large organ could not survive without a symmetrical nutritive system such as is afforded by the adjacent Petit's canal, plus the rhythm of the ciliary contractions.

## PEDIATRIC CASE REPORTS

Edited by  
**AMOS C. GIPSON, M. D.**  
Gadsden, Alabama

### HEMOLYTIC DISEASE OF THE NEWBORN

Case presented by

Joseph M. Humphries, M. D.

This white male infant was delivered by cesarean section on 3/30/52 and was referred to me by Dr. A. S. Hargis, Jr., and Dr. J. H. Williams to whom I am indebted for the maternal history. The infant's mother had one previous pregnancy in 1945. This terminated with the delivery of a normal female infant. Following delivery the mother received a blood transfusion from which she had a severe hemolytic reaction. The type of blood given is not known as this period of hospitalization occurred in an Army hospital which was subsequently closed and records are not available.

A slight amount of vaginal bleeding of 6 days duration occurred during the fourth month of this pregnancy. Stilbestrol was administered for several weeks following this episode. The estimated date of confinement was April 22, 1952. With the history of the transfusion reaction, the maternal blood type and Rh status were determined. These were found to be type A, Rh negative cde, with blocking antibodies present. The husband was type O, Rh positive cde. The results of maternal antibody determinations made during pregnancy are shown in Table I.

TABLE I—RESULTS OF RH ANTIBODY  
TITRATION USING ALBUMIN TECHNIQUE

| Date    | Titer  |
|---------|--------|
| 2 5 52  | 1-16   |
| 3 12 52 | 1-1024 |
| 3 28 52 | 1-1024 |

During the last trimester of pregnancy, the fetus was found to be presenting as a breech. Because of this and a pathologic uterine cervix, the obstetricians felt the delivery should be done by cesarean section. With the maternal indications for a section and in spite of the high blocking antibody titer, it was my impression that delivery should be delayed until near term. Roentgenograms made before the section confirmed the presence of a breech presentation and indicated that the fetal size was near term. Preparations were made for an immediate exchange transfusion at the time of

From the pediatric service, Baptist Hospital, Birmingham, Alabama.

delivery; however, at birth the infant appeared in good condition with a normal color. The contents of the nasopharynx, trachea, and stomach were aspirated. The liver and spleen were examined and found to be of normal size. It was then decided to await the results of the laboratory studies of the cord blood before proceeding with the transfusion. These results along with subsequent studies are tabulated in Table II.\*

TABLE II—BLOOD STUDIES OF INFANT

| Date<br>Time | Hemoglobin |          | Red Cell<br>Count | Erythroblasts<br>Per 100 WBC |
|--------------|------------|----------|-------------------|------------------------------|
|              | Grams      | Per Cent |                   |                              |
| Birth        | 9.0        | 58       | 2.2 million       | 54                           |
| 1st day      | 9.7        | 63       | 3.6 million       | 28                           |
| 2nd day      | 10.0       | 65       | 3.6 million       | 9                            |
| 3rd day      | 10.5       | 68       | 3.6 million       | 4                            |
| 4th day      | 10.5       | 68       |                   |                              |
| 5th day      | 11.0       | 71       |                   |                              |
| 6th day      | 11.3       | 73       |                   |                              |

The infant was found to be type A, Rh positive cde. The Coombs test was positive within 10 seconds. The icterus index was 37. The initial reports were made available within 30 minutes, and by that time edema and jaundice of his face had occurred. The umbilical cord became deeply jaundiced. The spleen was then palpated 3 centimeters below the costal margin; the liver about 5 cm. A polyethylene catheter was inserted into the umbilical vein and an exchange transfusion, using about 450 cc. of type specific Rh negative blood, was performed. The infant stood the procedure well and, at the conclusion, the spleen and liver were 1 and 2 centimeters, respectively, below the costal margin. As one would expect, the baby was moderately jaundiced for the next 36 hours but had a normal Moro reflex during this entire period. After the jaundice disappeared, the infant continued to do satisfactorily and was discharged with his mother eight days after birth. The birth weight was 6 lbs. and 14 ounces and discharge weight 6 lbs. and 6 ounces. Subsequent examinations were satisfactory.

*Discussion:* Hemolytic disease of the newborn usually results from the immunization of an Rh negative female by Rh positive blood. This immunization may be produced by transfusion of Rh positive blood into an Rh negative female or in pregnancy an Rh negative female may receive Rh positive blood from the fetus and thereby produce

anti-Rh agglutinins. In the instance reported, it is possible that either or both of these methods were responsible. The anti-Rh agglutinins thus produced by the mother damaged the fetal blood and produced hemolytic disease.

At present there is no practical means of preventing erythroblastosis, other than by the prevention of transfusion reactions such as may have occurred in the example reported. Once sensitization has occurred, it is not possible to remove the antibodies from the maternal blood, but where the possibility of erythroblastosis is likely to occur, the mother should be tested at periodic intervals for Rh antibodies. If the results of these tests indicate a high or rising blocking antibody titer, then preparation should be made for transfusion with suitable Rh negative blood. Should laboratory and physical examination of the infant at birth indicate the presence of hemolytic disease, it is much better to transfuse immediately. Certainly, the dangers of kernicterus are greatly decreased and possibly prevented if an early exchange transfusion is carried out.

Technically, the umbilical vein is the site of choice for early transfusion; however, in one instance of a premature I have used the femoral with equally good results.

The advisability of premature termination of pregnancy has been advocated with the idea of limiting the period of intra-uterine hemolysis. Such a practice is, in my opinion, not advisable unless the maternal history indicates the death of previous fetuses from hemolytic disease in the late weeks of pregnancy, or unless there is good laboratory evidence of severe hemolytic reaction. The level of antibody titer is a fair indicator of the severity of the disease in the fetus. Even then one should be reasonably certain that the duration of pregnancy is within one month of term; otherwise, the hazards of prematurity outweigh the continued exposure of the fetus to the destructive antibodies of the maternal blood.

In the example presented there were maternal indications for cesarean section.

In summary: Whenever maternal history and laboratory studies indicate the possibility of an erythroblastotic infant being born, preparation should be made for immediate transfusion. If examination and laboratory studies of the infant's cord blood indicate the presence of hemolytic disease, then an exchange type of transfusion is the procedure of choice using suitable Rh negative blood.

\*Acknowledgement is made to Dr. A. E. Casey and his staff for their cooperation and performance of the various laboratory tests.



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## ANTIBIOTIC TREATMENT OF VIRAL DISEASES

"When aureomycin and chloramphenicol were first introduced, it was readily demonstrated that, in addition to their effectiveness against a wide variety of bacteria, these antibiotics had specific preventive and 'curative' effects against experimental infections with rickettsial and certain viral agents. These antibiotics and now also tetracycline are, therefore, known as 'broad-spectrum antibiotics.' The impression soon became prevalent that these antibiotics are effective against all viral infections and also against many diseases of unknown but possibly viral etiology. This impression has been fortified by numerous clinical reports of their apparently successful use in diseases of known or suspected viral etiology in which previous therapy with sulfonamides, penicillin and streptomycin, alone or in combination, had failed.

"Unfortunately, this generalization has resulted in disappointment when applied to diseases caused by the smaller or true viruses, as might have been anticipated from the earliest reports; these had indicated that the effectiveness of aureomycin and chloramphenicol against experimental infections with nonbacterial microbial agents was limited to infections with rickettsias or with the larger viruses of the psittacosis-lymphogranuloma group."

Thus does Finland<sup>1</sup> begin his excellent article on this important subject. He goes into a discussion of many diseases and their treatment with antibiotics, but for reasons of space only his conclusions can be considered here. The Boston investigator tells us, in conclusion, that "In nonbacterial infections, unequivocally favorable and specific effects from the broad-spectrum antibiotics have been demonstrated only in the rickettsial diseases and in infections with viruses of the psittacosis, lymphogranuloma, trachoma group (Chlamydozoaceae). Most observers have noted favorable effects in characteristic cases of primary atypical (viral) pneumonia, but some workers have not been impressed with the results in this disease. The favorable effects in some cases of mumps require further substantiation. In other diseases which are known or suspected

1. Finland, Maxwell: Antibiotic Treatment of Viral Diseases, M. Clin. North America 36: 1239 (Sept.) 1952.

to be of viral etiology, the effects of the drugs and antibiotics now available are equivocal."

Statements such as the above coming from a man of Finland's reputation should most certainly carry much weight. Knowledge concerning both the viral diseases and antibiotic treatment is so new and changes so rapidly that it is difficult for many practitioners to keep adequately informed in regard to them. It behooves all physicians to make their best effort to know what is taking place. And, above all, they should know the dangers and limitations of new drugs and refrain from prescribing them with too much enthusiasm, recklessness and lack of discrimination.

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#### RED CROSS STATEMENT ON GAMMA GLOBULIN

The following statement has been issued by E. Roland Harriman, President of the American National Red Cross.

The Red Cross has been called upon to undertake an immediate and dramatic expansion of its participation in the National Blood Program to make available all the gamma globulin possible for the prevention of paralysis from poliomyelitis. Experiments conducted over the past two years in Provo, Utah; Houston, Texas; and Sioux City, Iowa, under the auspices of the National Foundation for Infantile Paralysis and as a part of their total research program, have demonstrated the effectiveness of this treatment. The Red Cross provided the gamma globulin used in these experiments without cost.

The acceptance by the Red Cross of the request of the Office of Defense Mobilization to undertake this program places a vast new responsibility upon the Red Cross and in turn upon the American people. It takes approximately one pint of blood to make an average dose of gamma globulin as used for poliomyelitis. One injection protects a child for a period of one to five weeks following exposure.

Estimates based on past experience indicate that poliomyelitis may strike in epidemic proportions in at least 150 counties next summer, and, if so, at least two million children in those counties may be exposed to the disease. Since gamma globulin is also needed for the modification of measles and in the prevention of infectious hepatitis,

there will of necessity be a shortage of the serum at the height of the poliomyelitis season.

After full study by the National Research Council in collaboration with agencies and groups concerned with the problem, they recommended to the Office of Defense Mobilization that the maximum blood fractionation capacity of this country be put to work immediately in an effort to meet the minimal epidemic needs for poliomyelitis by the summer of 1953. The request by the Office of Defense Mobilization to the Red Cross followed. The Board of Governors of the Red Cross, in view of the imperative need for this gamma globulin, agreed to assume its full share in carrying out the program.

This is a formidable undertaking. No large quantities of gamma globulin are available. The total processing facilities of the country at the present time are limited, but the processing laboratories have been asked to work at full capacity starting now. Even so, it is not anticipated that the laboratories will be able to produce the total quantity of gamma globulin needed for poliomyelitis in the epidemic areas during the summer of 1953. However, it is planned to continue maximum production in preparation for 1954.

The Red Cross will not allocate or distribute the gamma globulin. Since the amount of globulin needed will far exceed the expected supply, the Office of Defense Mobilization has requested the National Research Council to consult with appropriate professional, industrial, and governmental groups to determine the most feasible and equitable method of allocation and distribution in time for the next poliomyelitis season.

The Red Cross will furnish its total supply of gamma globulin to the allocation agency without charge for the product in keeping with the policy now governing our distribution of blood and blood products.

Over and above this new project, we must continue to meet the day-by-day blood needs of civilian hospitals and of the Korean wounded, and continue to build the nation's plasma reserve through the 61 blood centers operated by the Red Cross and the centers operated by the cooperating blood banks. In all, the Red Cross—and private blood banks cooperating with it—must collect blood at the rate of approximately 5,000,000 pints a year if this total program is to be carried out successfully.



Fortunately, we are well organized and equipped to meet this new challenge. The Red Cross has a World War II experience in which over 13,000,000 pints of blood were collected for the armed forces. Since our present Blood Program was inaugurated in 1948, we have collected, with the help of co-operating community blood banks, over 7,800,000 pints of blood for civilian use and for national defense. In addition, we have distributed through health offices to physicians for the prevention of measles and hepatitis 3,457,435 units (2 cc. vials) of gamma globulin.

While this new expansion of our program will draw heavily upon the financial and volunteer resources of the organization, I am confident that we will be able to do the job successfully, if we receive the same help from the American people that we have always had in the past. We will need the help of community blood banks, of physicians, and volunteer workers. We must draw heavily upon the generosity of the American people both for the blood needed in the production of gamma globulin and for the additional money to finance this new phase of the Blood Program. The gamma globulin for poliomyelitis, and additional costs for equipment, personnel, and processing, is estimated to require approximately \$7,000,000. Originally our budgetary requirements for all other Red Cross programs for the forthcoming year total \$86,000,000. Now, with the additional cost of gamma globulin production, we ask the American people for \$93,000,000 in our March 1953 campaign.

We have responded to this emergency appeal and all our chapters have been alerted, relying upon the cooperation of everyone concerned. We are confident that the people in turn will respond with blood and money so that within the near future new hope for children who are exposed to poliomyelitis may be piling up in blood bottles across the nation and the pipeline to processing facilities will be kept full.

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#### **DR. AND MRS. CHENAULT, GUESTS OF HONOR**

Dr. and Mrs. Frank L. Chenault of Decatur will be Alabama's guests of honor at the First Western Hemisphere Conference of the World Medical Association, to be held in Richmond April 23 to 25, 1953, in observance

of the lengthening of life and the constant improvement of human health.

Governor Gordon Persons of Alabama told Governor John S. Battle of Virginia of the selection, adding that "Dr. Chenault is one of Alabama's best known physicians and he and his wife are a very gracious couple." Recently Governor Battle asked each of his 47 fellow-governors to appoint a physician who will reach the age of 75 during 1953 to visit Virginia and tell of medical advances that have taken place during his lifetime. The invitation included the physician's wife.

Dr. Chenault was born in 1878, the year when pioneering Robert Koch published a history-making treatise on causes of infection, opening the way to rapid progress in surgery and other fields of medicine. Dr. Chenault was graduated in 1904 from the Birmingham Medical College, later merged with the University of Alabama.

At the Richmond conference, guests will be greeted by Dr. Louis H. Bauer, president of the American Medical Association, and by leaders of Latin American medical societies. Besides scientific sessions, there will be opportunities for visiting historic sites in Virginia, including the 18th century Williamsburg restoration. Expenses of the conference, and of guests and delegates, are covered through a grant by A. H. Robins Co., Inc., ethical pharmaceutical house founded in Richmond 75 years ago next year.

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#### **ON THE DEATH OF DR. J. M. MASON**

The death of Dr. James M. Mason on October 7, 1952 is an inestimable loss to the Alabama Society of Medical History. Through it the Society has lost a wise leader and teacher, an honest counselor, a kindly man and a dear friend. The Society wishes to express its great appreciation of these qualities and to enter upon its minutes these resolutions to the memory of a member whom it can ill afford to lose.

With his strong personality, his distinguished appearance, his gift of wit and humor, his intellectual honesty, his keen insight and wisdom acquired through wide experience and his unswerving allegiance to the ideals for which he stood, he was a dominant figure among his fellow men. As a surgeon and a teacher he has left the world his debtor. His writings testify to the breadth of his training and to his broad interests in the fields of surgery and medical history.

He has been a leading figure in this Society since its organization when he as one of the founders met to determine its aims and to charter its course. Since then he has served as president and as honorary president. He attended every meeting and endeavored in many ways to create a widespread interest in medical history among the physicians of Alabama. His own addresses

and his discussions of other addresses were always sparkling, entertaining and informative.

The memory of his staunch character and his straightforward approach to problems will remain a choice possession of his family and of all the members of this Society.

Adopted by the Society  
December 3, 1952

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## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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### LET'S KEEP THIS ONE

W. A. Dozier, Jr.  
Director of Public Relations

New Year's Day is well behind us; and many are saying to themselves, "What happened to all the good resolutions I made? My intentions were the best; what happened along the way to cause me to drop into the old rut?" Some can look at their record and say that they have kept all or at least part of their good intentions, this being about all such resolutions amount to anyway. Still others admit that, for one reason or another, they did not make any. No matter what category each member of the Association falls into, it does seem that there is one resolution that should be made and kept. It is being offered at this late date for the purpose of making it stand alone, and maybe in that manner it will assume greater significance.

Let each person resolve that during 1953 he will practice better and stronger public relations.

This column has been devoted to many aspects of public relations; but for the nonce and in keeping with the above resolution, let us look at only one phase, the relations between you and your elected representatives, whether on a national or state level. Since Congress is in session and the State Legislature will begin work in May, such a consideration seems apropos.

It would seem that there are three very important aspects necessary in your relations with these elected representatives. First and foremost, it behooves all of us to try to get a better understanding of their jobs. Take for example your Congressman. Do you have a real knowledge of the tre-

mendous amount of work he has to do? Do you even comprehend the number of proposed bills that he has placed before him and on which he tries to make an enlightened decision? (The word comprehend was used in that last question because it connotes an appreciation of and not just knowing the number.) Or do you blithely turn the matter aside with a remark to the effect that he seems to spend his time investigating someone or something or demanding that an investigation be made. Do you realize the many, many hours he spends in committee hearings, reading background material, or talking to experts in various fields? It is very easy to criticize, and sometimes criticism is deserved and just. But before we become too vindictive, let us try to understand some of his problems too.

The next thing to remember in your relations with your political representatives is that they need to know your thoughts so that they may better serve you. If one asks a representative, he will tell you that physicians are very remiss in letting their ideas be known on subjects under consideration by Congress. Oh, sure, a year or two ago he was swamped with all types of communications opposing national compulsory health insurance, but it goes further and deeper than that. Let us look at it from his viewpoint. He is sent to Washington to represent you. He wants to serve you to the best of his ability. You let him know your thoughts on one specific proposal, but for the rest of his term he hears nothing. All he can do is try to satisfy, but in such an instance he has very little on which to proceed. It would be far better for you and for him if you kept him informed as to how you saw various



proposals and their underlying philosophies. Talk with him when he is at home; question him; write him. He will serve you better if you do.

And lastly, but perhaps of greatest importance, one should thank his representatives for the jobs they are doing. "Oh," you say. "Why thank them? They are being well paid for their work." Perhaps they are; but, then, so are you. Just how much better do

you feel personally and how much better attitude do you have toward a patient who thanks you; even though he also paid you for the service rendered? Appreciation is never lost on the recipient, and a word of thanks takes so little time and effort.

Yes, it is too late for a new year's resolution; but it is not too late to resolve to practice better public relations in the coming months.

## STATE DEPARTMENT OF HEALTH

### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

#### THE PROBLEMS OF OLD AGE

A recent writer in the *Journal of the American Medical Association* predicted that within the next few months this country's old people—those past 64—would number some 13,500,000. That writer was John H. Miller, vice-president and actuary of the Monarch Life Insurance Company. If this total does not strike you as impressive, it should. For, as Mr. Miller pointed out, it represents an increase of 100 per cent since 1930. Moreover, he declared, there were only about a fourth that many old people in the United States in 1900.

Let us take a brief look at this problem of increasing agedness. The writer is indebted for much of his information to a booklet issued by the Committee on Aging and Geriatrics of the Federal Security Agency. It is appropriately titled *Fact Book on Aging*.

During the past 50 years, it tells us, the population of the United States has doubled. During the same time, it adds, the number of people past 65 has quadrupled. (This of course is essentially what Mr. Miller said in his article.)

In 1900 only one American out of every 25, on an average, was 65 years of age and older. Today about one in 12 has passed 64. And, what is equally important, the trend is not only continuing. It is also increasing steadily.

Those who have reached life's theoretical middle point have also shown a considerable increase. At the turn of the century one out

of every seven, on an average, was between 45 and 64. Now those in that age group average about one in five. So the increasing problems of old age are bringing other problems along with them—the problems of those who are not yet old but are certainly no longer young.

There may be a number of possible explanations for these increases. But the main one, it is generally conceded, is the progress made in the conquest of the illnesses of childhood. It stands to reason that if you reduce the infant death rate sharply, for example, you make it possible for larger numbers of babies to "graduate" into young children. And, if you sharply reduce the killing power of the illnesses that formerly proved most destructive of older children, you send more into adulthood. And so on. That is a fortunate thing of course, a very fortunate thing. But it brings on problems too.

The general lifting of health levels at other ages has also contributed to the problems of aging. Typhoid, for example, is not primarily a disease of childhood, although youngsters can and do get it. And typhoid is nothing like as prevalent or as deadly as it used to be. As a result, many fewer adults get this disease and vastly fewer, percentage-wise, die from it. Those who thus escape it entirely or survive the relatively few attacks which still occur make substantial additions to the ranks of the middle-aged and the elderly. And what has just been said of typhoid may be said of tuberculosis and certain other forms of illness. Here again a happy situation brings on, or increases, a bad one.

In general, low birth rates tend to swell

the ranks of the aged. That is entirely logical of course. For a high birth rate means just one thing: A large number of babies are being born in relation to the rest of the population. And every newly born baby adds its small but significant figure to the "numerator" of our population-ratio fraction—the number on top of the line. Alabama, one of the "newer" states and one with a high birth rate, therefore, has a smaller ratio of older people to total population than most other states. As a matter of fact, only seven of the 48 states had lower ratios in 1950 than this state had. The Alabama percentage was 6.5. That is, about one Alabamian out of every 15, on an average, was at least 65 years old. The Virginia ratio was the same. Those seven states in which there were fewer older people (65 and older) than in this state were Arizona, Georgia, New Mexico, North Carolina, South Carolina, Utah and Wyoming. Georgia and the two Carolinas could not be called "new states," by any means, having been among the original 13. But they have large Negro populations, and any state having a large proportion of Negroes is almost certain to have a high birth rate. The other four—Arizona, New Mexico, Utah and Wyoming—were settled much later than the eastern seaboard states. They also include a considerable number of Indians among their population. And Indians, like Negroes, have unusually high birth rates.

The Alabama ratio was substantially under the 8.1 per cent for the United States as a whole. But, like most other parts of the country, Alabama is swinging definitely in the direction of relatively more old people and relatively fewer younger ones.

This is made plain by the 1950 census. This state's total population increased slightly more than 8 per cent between 1940 and 1950. But its population 65 years of age and older increased during that period by nearly 46 per cent. That is, that ten-year increase among our older people was more than five times as great as the increase in the population as a whole. In the entire United States the total population increased between 14 and 15 per cent. Those 65 and over increased by more than 36 per cent.

You may be under the impression that women are still the weaker sex. (Many people still think that.) But they definitely are not, if you think of weakness in terms of long life. Old women outnumber old men

by a significant margin. Whereas, at the turn of the century, there were 102 old men for every 100 old women, nowadays there are only about 90 old men for every 100 old women. The anonymous author of that already-mentioned *Fact Book on Aging* has a possible explanation for this change. He says:

"The trend toward more older women than men is the result of a more rapid decline in female than in male mortality. More boy babies are born than girl babies, but since in every age class the male death rate is higher than the female death rate, the male superiority in numbers, in a given generation, doesn't last long.

"The fact that until 1930 there were more aged men than women is attributable in part to the relatively large number of men among the immigrants who came to this country in the heavy immigration of the decades prior to World War I."

Since older women outnumber older men by a substantial margin, you would naturally expect more older men than older women to be married. And that is quite correct. This tendency is made even more pronounced by another fact, which you may or may not have thought of: Men tend to marry women younger than they are. So, whenever a man, say, 65 years old decides to remarry or to marry for the first time, he is more likely to marry someone in her early 60's than a woman his own age or older. But whenever a 65-year-old woman tires of the loneliness of widowhood or of prolonged bachelor girlhood and seeks a suitable mate, she is more likely to look for someone in his late 60's or early 70's.

Then there is the matter of adjustment to widowhood and widowerhood. Women seem to adjust better to the former than men to the latter. If an older woman is well enough off financially to live comfortably on her income, she is likely to feel no particular need for a second husband, or for a first one, if she has gotten along without one for that long. But a man is different. He needs a woman about the house. He is restless and dissatisfied. He is harder to please in the way of eating. An unmarried woman, old or young, can prepare her own meals and give herself what she wants to eat. But an unattached man has to eat in boarding houses or other public eating places. And he often does not like that any too well. So the remarriage instinct is much stronger with him.

These conditions, and others too perhaps, lead to the fact that the typical older man



is married, while the typical older woman is a widow. As that booklet tells us: "By the time they reach 70, more than half of all women are widows. At that age, however, almost three in four men are still married. It is not until they are 85 years or so that a majority of men find themselves in a widowed state."

Strangely enough, considering how many old people have lost their spouses, comparatively few of them live in institutions. Most of them live in families, usually their own. In 1950, it was found that seven out of every 10, on an average, maintained households of their own. This speaks well for the foresight, thrift and thoughtfulness of husbands who looked ahead through the years and saw to it that their widows would at least have houses to live in and incomes sufficiently large to maintain them in respectable surroundings. Of course a significant number of those who maintain their own households are men. After the death of their wives, if they were married, they naturally took possession of the houses in which they and their wives had lived before bereavement divided them. They may be living there with their children and in-laws. They may be letting congenial couples live there for fixed rent or in exchange for such attention as they may require. But at least they do not have, in their old age, to try to adjust themselves to living in strange houses and perhaps even in strange neighborhoods. They are fortunate, of course.

You may have seen those disturbing statistics and diagrams which the life insurance companies and savings institutions publicize every now and then, showing the rise and decline of earning capacity and normal income. They show that most people—particularly those without special training, special talents or special skill—have to get along on less and less as old age comes on. The wear and tear of time, to say nothing of the effects of disease, make it hard for the old, especially the untrained old, to compete successfully with the young, the healthy and the vigorous. More and more they are forced into less desirable and less well paid jobs. They dare not risk failure and maybe prolonged unemployment in order to take on new and better jobs. The young feel justified in taking that risk. For they have many years of activity and vigor ahead, in which they can recover from the effects of failure.

In view of what has just been said, it is not surprising that old people, as a whole,

are low-income people. Those fortunate enough to have retirement incomes find them much smaller than the salaries or commissions that came in regularly when they were in their prime. As the already-mentioned booklet, *Fact Book on Aging*, tells us: "A relatively large number of families with an aged head are dependent upon old-age assistance."

And what about the health of our old people?

"Illness is no respecter of age," that booklet reminds us, "but older persons are subject to more illness than others in the population." It goes on:

"On any given day, one in every seven men and women aged 65 and over is disabled and 4 out of every 7 of these (8 per cent of all aged persons) are disabled because of major chronic diseases or impairments. This disability rate is around two and a half times as large as that for the total population, while the relative number of persons with chronic conditions is about four times that for the population as a whole.

"Such disability involved total incapacity to work at a job or to engage in normal household duties on the day of the interview. Disabilities of a less severe nature limit the activities of a very large proportion of other aged persons."

And what kinds of disease and disability most often afflict the aged?

Among what the Committee on Aging and Geriatrics calls "the more disabling conditions" involving those who have reached old age are blindness, deafness and the loss of use of arm or leg. The ratio of cases of disabling orthopedic conditions among men increases sharply from six per thousand for those between 45 and 64 to 14 per thousand for those from 65 to 74 and 21 per thousand for those 75 years of age and older. Only two men out of every thousand between 45 and 64, on an average, are totally blind. But 13 out of every thousand are totally blind in the above-74 age group. Similar increases are found among women.

Heart disease causes almost half of all the deaths among those 65 and older. Other forms of illness taking heavy toll of the aged are cancer, cerebral hemorrhage and hardening of the arteries.

Robert Browning, the poet, Cicero and a number of others have sung the praises of old age. And those sunset years bring their

rewards and their pleasures. But they also bring their problems. It is the duty of the individual and of society to recognize this fact and face those problems courageously.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

November 1952

SPECIMENS EXAMINED

|   |        |
|---|--------|
| Examinations for diphtheria bacilli and Vincent's .....         | 955    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 807    |
| Typhoid cultures (blood, feces and urine) .....                 | 467    |
| Examinations for malaria .....                                  | 114    |
| Examinations for intestinal parasites .....                     | 4,187  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 20,473 |
| Darkfield examinations .....                                    | 5      |
| Examinations for gonococci .....                                | 1,258  |
| Examinations for tubercle bacilli .....                         | 2,589  |
| Examinations for meningococci .....                             | 0      |
| Examinations for Negri bodies (microscopic) .....               | 91     |
| Water examinations .....  | 1,430  |
| Milk and dairy products examinations .....                      | 3,666  |
| Miscellaneous .....   | 3,864  |
| Total   | 39,921 |

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

PROVISIONAL MORBIDITY STATISTICS

1952

|                               | Oct. | Nov. | E. E.*<br>Nov. |
|-------------------------------|------|------|----------------|
| Typhoid and paratyphoid ..... | 5    | 1    | 3              |
| Undulant fever .....          | 3    | 2    | 4              |
| Meningitis .....              | 6    | 13   | 8              |
| Scarlet fever .....           | 40   | 77   | 84             |
| Whooping cough .....          | 13   | 51   | 55             |
| Diphtheria .....              | 81   | 59   | 70             |
| Tetanus .....                 | 8    | 5    | 4              |
| Tuberculosis .....            | 201  | 185  | 196            |
| Tularemia .....               | 1    | 0    | 1              |
| Amebic dysentery .....        | 2    | 4    | 1              |
| Malaria .....                 | 4    | 1    | 30             |
| Influenza .....               | 137  | 281  | 107            |
| Smallpox .....                | 0    | 0    | 0              |
| Measles .....                 | 39   | 106  | 38             |
| Poliomyelitis .....           | 28   | 23   | 6              |
| Encephalitis .....            | 0    | 0    | 0              |
| Chickenpox .....              | 9    | 310  | 61             |
| Typhus fever .....            | 0    | 1    | 13             |
| Mumps .....                   | 23   | 57   | 37             |
| Cancer .....                  | 458  | 523  | 256            |
| Pellagra .....                | 4    | 1    | 2              |
| Pneumonia .....               | 88   | 178  | 125            |
| Syphilis .....                | 181  | 233  | 966            |
| Chancroid .....               | 3    | 10   | 13             |
| Gonorrhea .....               | 333  | 340  | 461            |
| Rabies—Human cases .....      | 0    | 0    | 0              |
| Positive animal heads .....   | 32   | 55   | 0              |

As reported by physicians and including deaths not reported as cases.  
\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

AEDES AEGYPTI SURVEYS IN THREE CITIES IN ALABAMA IN 1952

Contributed By

Oscar V. Lopp, Sanitarian (R)

Alabama C. D. C. Entomologist

The State Department of Health, in co-operation with the U. S. Public Health Service, Communicable Disease Center, Atlanta, Georgia, conducted surveys of three cities in Alabama during the summer of 1952 to determine the extent of *Aedes aegypti* mosquito breeding in various parts of the state. Since this mosquito is a species of southern occurrence, the major survey was made in the city of Mobile, where seventy-five residential blocks and twenty-five industrial or business blocks were inspected. Minor surveys of nine residential blocks and three business blocks were conducted in each of the cities of Montgomery and Birmingham to obtain information on the relative abundance and distribution of *aegypti* northward in the state. In addition to securing data on the prevalence of *aegypti*, which is the vector of yellow fever and dengue fever, the survey was also utilized to obtain information on the extent of *Culex* mosquito breeding in the inspected areas. Although *Culex* mosquitoes are generally accepted as being merely annoying or pest species, their medical importance is being recognized more and more as research evidence indicates that certain of the *Culex* species represent potential vectors of some of the insect-borne human diseases.

The *aegypti* mosquito is a domestic species which breeds in practically all kinds of artificial containers such as tin cans, old automobile tires, etc., in the vicinity of dwellings, and frequently inside the dwellings in such containers as flower vases. The survey procedure, therefore, required the inspection of all the individual premises of selected blocks to detect the presence of suitable containers which would hold water sufficiently long to breed mosquitoes. Receptacles containing water were examined for the presence of *aegypti* and *Culex* larvae, and the findings recorded on suitable forms. Instructions relative to the survey procedures, and the detailed forms used for recording the inspection data, were furnished by the Communicable Disease Center. Valuable assistance was also given by the County



Health Departments of Mobile, Montgomery, and Jefferson Counties, whose personnel contributed very significantly to the successful completion of the inspection program.

## MOBILE SURVEY

The Mobile survey was made during August 1952, at a time when rains and cooler weather ended a period of severe drought and high temperature. Practically all containers suitable for mosquito breeding were found to contain water at the time of inspection. Discussion of the results of the Mobile survey will be divided into residential area and business area, and presented separately for the purpose of clarity.

## MOBILE RESIDENTIAL AREA

As previously indicated, 75 residential blocks were inspected in Mobile; *aegypti* larvae were found in 57 blocks, and *Culex* larvae in 68 blocks. One thousand and eight (1008) residential premise inspections were made, 673 on the exterior only, and 335 on both interior and exterior. *Aedes aegypti* larvae were found on 141 premises or 14.0% of the total residential premises inspected; *Culex* larvae were found on 205 premises, or 20.3% of the total. No mosquito larvae were found on the interior of any dwelling inspected.

Table I indicates the types of receptacles in which mosquito breeding was found in the Mobile residential area, and also shows the observed frequency of breeding by species and individual type of receptacle. Breeding was observed most frequently in the larger (wide-mouth) jars, pans, and cans. Buckets, tin cans, small jars and tires were also favored breeding places. Of the total of 465 receptacles found breeding, 55.5% contained *aegypti* larvae; 87.5% contained *Culex* larvae; and 43.0% contained both *aegypti* and *Culex*.

## MOBILE BUSINESS AREA

Twenty-five blocks were inspected in the industrial and business area of Mobile; *aegypti* were found in 20 blocks and *Culex* in 23 blocks. A total of 111 business establishments were inspected, 62 on the exterior only, and 50 on both interior and exterior. *Aedes aegypti* larvae were found at 33 establishments or 29.5% of the total inspected; *Culex* larvae were found at 40 establishments, or 35.7% of the total. *Aedes aegypti* larvae were found in permanent tanks inside of one establishment.

TABLE I  
AEDES AEGYPTI AND CULEX SPECIES. BREEDING  
BY TYPES OF RECEPTACLES IN SEVENTY-FIVE  
RESIDENTIAL BLOCKS IN MOBILE

| Type Receptacle              | No. Found<br>Breeding | No. Breeding<br><i>Aegypti</i> | No. Breeding<br><i>Culex</i> | No. Breeding<br>Both <i>Aegypti</i><br>and <i>Culex</i> |
|------------------------------|-----------------------|--------------------------------|------------------------------|---|
| Barrels                      | 4                     | 2                              | 4                            | 2   |
| Tubs-troughs                 | 12                    | 10                             | 7                            | 5   |
| Animal drinking pans         | 10                    | 5                              | 10                           | 5   |
| Outside plants               | 5                     | 1                              | 5                            | 1   |
| Buckets                      | 86                    | 54                             | 76                           | 44  |
| Large jars-pans-cans         | 163                   | 91                             | 136                          | 64  |
| Tin cans-small jars          | 88                    | 23                             | 83                           | 18  |
| Tires                        | 81                    | 67                             | 72                           | 58  |
| Bottles                      | 12                    | 2                              | 10                           |   |
| Miscellaneous                | 4                     | 3                              | 4                            | 3   |
| Total                        | 465                   | 258                            | 407                          | 200   |
| % of total found<br>breeding |                       | 55.5                           | 87.5                         | 43.0  |

Table II indicates the types of receptacles in which mosquito larvae were observed in the Mobile business area, and also shows the observed frequency of breeding by species and individual type of receptacle. Breeding was observed most frequently in old tires, with cans and bottles the next most favored places. Of the total of 131 receptacles found breeding in the business area, 64.9% contained *aegypti* larvae; 82.4% contained *Culex* larvae; and 47.3% contained both *aegypti* and *Culex*.

TABLE II  
AEDES AEGYPTI AND CULEX SPECIES. BREEDING  
BY TYPES OF RECEPTACLES IN TWENTY-FIVE  
BUSINESS BLOCKS IN MOBILE

| Type Receptacle              | No. Found<br>Breeding | No. Breeding<br><i>Aegypti</i> | No. Breeding<br><i>Culex</i> | No. Breeding<br>Both <i>Aegypti</i><br>and <i>Culex</i> |
|------------------------------|-----------------------|--------------------------------|------------------------------|---|
| Permanent tank               | 12                    | 2                              | 12                           | 2   |
| Barrels                      | 3                     | 1                              | 3                            | 1   |
| Tubs-troughs                 | 6                     | 2                              | 6                            | 2   |
| Other semi-permanent         | 2                     | 2                              |                              |   |
| Tires                        | 56                    | 45                             | 43                           | 32  |
| Cans-bottles                 | 26                    | 13                             | 24                           | 11  |
| Buckets-pans                 | 13                    | 7                              | 10                           | 4   |
| Water plants                 | 10                    | 10                             | 7                            | 7   |
| Other temporary              | 3                     | 3                              | 3                            | 3   |
| Total                        | 131                   | 85                             | 108                          | 62  |
| % of total found<br>breeding |                       | 64.9                           | 82.4                         | 47.3  |

## MONTGOMERY AND BIRMINGHAM SURVEYS

The *aegypti* surveys of twelve blocks each in Montgomery and Birmingham were con-

ducted in July 1952 during one of the severest droughts ever experienced in these areas. Lack of rain, plus unusually high daily temperatures, resulted in the drying out of practically all artificial containers that normally would have held sufficient water for mosquito breeding. Consequently all the residential blocks selected for survey in the two cities named above were deliberately chosen from low income housing areas where the presence of an abundance of receptacles would be expected, in the hope that at least a few of them would contain water. A similar procedure was employed in selecting the industrial or business blocks for survey in these two cities, with the exception of one block in Montgomery which proved to have no receptacles containing water. In consideration of the relatively small number of blocks inspected in Montgomery and Birmingham, the results of these surveys will be presented briefly.

#### MONTGOMERY AND BIRMINGHAM RESIDENTIAL AREAS

Both *aegypti* and *Culex* larvae were found in all nine of the residential blocks inspected in Montgomery; in Birmingham, *aegypti* were found in four blocks and *Culex* in five blocks. One hundred sixty four (164) residential premises were inspected in Montgomery, of which 11.0% were breeding *aegypti*, and 14.0% breeding *Culex*. In Birmingham, residential inspections were made on 228 premises, 3.1% of which produced *aegypti* and 3.5% *Culex*. In both cities old tires constituted more than half of all the receptacles producing mosquitoes in the residential areas. In Montgomery 52 receptacles were found breeding mosquitoes; 73.1% contained *aegypti*, 96.1% *Culex*, and 69.2% both. In Birmingham 17 receptacles were found containing larvae; 82.4% contained *aegypti*, 100.0% *Culex*, and 82.4% both.

#### MONTGOMERY AND BIRMINGHAM BUSINESS AREAS

Three industrial or business blocks were surveyed in Montgomery and in Birmingham; two Montgomery blocks were found breeding *aegypti* and *Culex*, while both were found in all three Birmingham blocks. Of a total of 13 establishments inspected in Montgomery two were found breeding both *aegypti* and *Culex*; in Birmingham four establishments were found with *aegypti*; and three with *Culex*, out of a total of nine inspected. In the Montgomery business area, mosquito breeding was observed in a

total of six receptacles, of which three contained *aegypti*, six *Culex*, and three both *aegypti* and *Culex*. In the Birmingham business area, larvae were observed in nineteen receptacles, of which eight contained *aegypti*, seventeen *Culex*, and six both kinds. In the business areas of both Montgomery and Birmingham, mosquito larvae were observed in a variety of receptacles, with breeding occurring in practically all of the few containing water. No *aegypti* were found on the inside of any unit inspected in either Montgomery or Birmingham.

#### SUMMARY

*Aedes aegypti* surveys were conducted in Mobile, Montgomery and Birmingham during July and August 1952. Data on the breeding of *Culex* species were also compiled as parts of these surveys.

*Aedes aegypti* were found in 15.5% of the total number of units inspected in Mobile; in 11.3% in Montgomery; and in 4.6% in Birmingham. *Culex* were found in 21.9% of the total number of units inspected in Mobile; in 14.1% in Montgomery; and in 4.6% in Birmingham.

*Aedes aegypti* were found inside of only one unit out of a total of 456 units inspected on the interior in the three cities surveyed. Factors contributing to this almost complete absence of *aegypti* inside of buildings are probably improvements in sanitation, education resulting from mosquito control campaigns, and widespread use of insecticides.

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The education of the patient is essential not only for the patient's own welfare and protection of his family, but also for the protection of the staff. We believe every nurse is a teacher. With the tuberculosis patient, education must begin with his diagnosis and be continuous throughout his care. The nurse must appreciate the fact that education about his illness is an integral part of nursing care of the tuberculosis patient.—Miss Aileen Flett, *Medical Papers of the Annual Meeting of the Canadian Tuberculosis Association, May 1951.*

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Where we were once content to diagnose bronchogenic carcinoma rarely, tuberculosis only in the moderately advanced stage, and bronchiectasis by such late signs as cavernous breathing at the base, fixation of the chest, and cyanosis, we have advanced to the point where these diseases can be detected in the earliest stage. Drugs have been discovered that have brought many of the deadliest diseases under the therapeutic yoke. The antibiotic age has permitted an ever increasing application of surgical measures whereby irreversibly diseased tissues have been excised easily, fearlessly, and successfully.—J. Winthrop Peabody, M. D., J. A. M. A., Dec. 13, 1952.



## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

## PROVISIONAL BIRTH AND DEATH STATISTICS FOR SEPTEMBER 1952, AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                                | Number<br>Registered<br>During<br>September 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|--|--|-------|---------|--------------------------|-------|-------|
|  | Total  | White | Colored | 1952                     | 1951  | 1950  |
| Total live births  | 7767   |       |         | 30.2                     | 29.0  | 29.1  |
| Total stillbirths  | 198  |       |         | 24.9                     | 24.9  | 26.3  |
| Deaths, stillbirths<br>excluded  | 1966   | 1140  | 826     | 7.6                      | 7.7   | 8.4   |
| Infant deaths:   |  |       |         |                          |       |       |
| under one year   | 231  | 109   | 122     | 29.7                     | 35.7  | 34.8  |
| under one month  | 176  | 89    | 87      | 22.7                     | 26.5  | 25.7  |
| <b>Cause of Death</b>  |  |       |         |                          |       |       |
| Tuberculosis, 001-019  | 38   | 16    | 22      | 14.8                     | 20.8  | 25.4  |
| Syphilis, 020-029  | 9  | 5     | 4       | 3.5                      | 4.3   | 3.6   |
| Dysentery, 045-048   | 2  | 2     |         | 0.8                      | 0.8   |       |
| Diphtheria, 055  | 5  | 1     | 4       | 1.9                      |       | 1.6   |
| Whooping cough, 056  |  |       |         |                          | 0.8   | 2.0   |
| Meningococcal infections, 057  |  |       |         |                          | 1.2   |       |
| Poliomyelitis, 080, 081  | 3  | 2     | 1       | 1.2                      | 2.7   | 1.2   |
| Encephalitis, 082, 083   | 1  |       | 1       | 0.4                      | 0.4   |       |
| Measles, 085   | 1  |       | 1       | 0.4                      |       |       |
| Malaria, 110-117   |  |       |         |                          | 0.4   | 0.4   |
| Malignant neoplasms,<br>140-205  | 245  | 165   | 80      | 95.3                     | 75.7  | 97.9  |
| Diabetes mellitus, 260   | 18   | 13    | 5       | 7.0                      | 6.3   | 7.5   |
| Pellagra, 281  |  |       |         |                          | 0.8   | 1.2   |
| Vascular lesions of<br>central nervous system,<br>330-334                        | 213  | 122   | 91      | 82.8                     | 88.2  | 92.8  |
| Other diseases of nervous<br>system, 300-318,<br>340-398                         | 21   | 12    | 9       | 8.2                      | 13.3  | 11.9  |
| Rheumatic fever,<br>400-402  | 3  | 1     | 2       | 1.2                      | 0.4   | 1.2   |
| Diseases of the heart,<br>410-443  | 598  | 379   | 219     | 232.6                    | 221.5 | 253.7 |
| Diseases of the arteries,<br>450-456   | 26   | 22    | 4       | 10.1                     | 7.1   | 10.3  |
| Other diseases of the<br>circulatory system,<br>444-447, 460-468                 | 33   | 15    | 18      | 12.8                     | 11.0  | 11.9  |
| Influenza, 480-483   | 4  | 4     |         | 1.6                      |       | 2.4   |
| Pneumonia, 490-493   | 34   | 13    | 21      | 13.2                     | 19.6  | 23.0  |
| Bronchitis, 500-502  | 5  | 4     | 1       | 1.9                      |       | 2.0   |
| Appendicitis, 550-553  | 2  | 1     | 1       | 0.8                      | 1.2   | 3.2   |
| Intestinal obstruction<br>and hernia, 560, 570,<br>561                           | 5  | 2     | 3       | 1.9                      | 2.7   | 4.8   |
| Gastro-enteritis and<br>colitis (under 2)<br>571.0, 764                          | 20   | 7     | 13      | 7.8                      | 7.8   | 7.5   |
| Cirrhosis of liver, 581  | 15   | 12    | 3       | 5.8                      | 3.1   | 7.5   |
| Diseases of pregnancy<br>and childbirth,<br>640-689                              | 19   | 6     | 13      | 23.8                     | 18.4  | 21.2  |
| Sepsis of pregnancy<br>and childbirth, 640,<br>641, 645.1, 651, 681,<br>682, 684 | 6  | 1     | 5       | 7.5                      | 4.0   | 2.6   |
| Congenital malforma-<br>tions, 750-759   | 29   | 21    | 8       | 3.7                      | 3.9   | 3.1   |
| Accidental deaths,<br>total, 800-962   | 130  | 92    | 38      | 50.6                     | 67.4  | 63.4  |
| Motor vehicle acci-<br>dents, 810-835, 960                                       | 55   | 42    | 13      | 21.4                     | 36.9  | 27.0  |
| All other defined<br>causes  | 388  | 190   | 198     | 150.9                    | 162.3 | 160.2 |
| Ill-defined and un-<br>known causes, 780-<br>793, 795                            | 99   | 33    | 66      | 38.5                     | 36.5  | 32.5  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the September report of the years specified.

**Geriatrics**—No consideration of the medical problems of the old can be divorced from the social problems which are presented by this group. Furthermore, just as few diseases affect only the

geriatric group, so the social problems of this class affect all age groups in society.

As a result of advances in medical knowledge and public health practice, life expectancy increased from 48 years in 1900 to 67.2 years in 1948. This extension of the span of life has dislocated the usual age patterns of workers. Decreasing birth and death rates with marked immigration restrictions have reduced the number of young workers and increased the proportion of people in the older age groups. Although it is not within the scope of this paper to discuss the economic and social changes necessitated by this social shift, it is apparent that these factors directly affect the medical problems of the aged.

Geriatrics is a comparatively recent field of medical specialization, yet from time immemorial physicians in all fields of medicine have cared for the aged. There is no place to begin a discussion of their specific problems and no place to end. A full consideration of medicine and surgery with all their subspecialties would have to be included.

The attitude and approach of the physician to the older patient is of the greatest importance. The law considers us old and unfit for work at the arbitrary age of 65. With this general belief fostered by our government, the busy physician finds it easy to give the older patient little consideration when he complains of tiring easily or of general aches and pains that do not suggest grave disease. How many of us have listened to these complaints and thought, "Well, what does he expect at his age?" The younger the physician, the earlier old age sets in, in his patients. It is the rule rather than the exception that a half-hearted search for organic disease is made. Variations from the normal, if not too great, are attributed to old age and either disregarded or treated lightly. If organic disease is discovered, there is essentially no difference in the disease pattern in the young or old. Conditions such as malignancies, tuberculosis, heart and kidney disease require expert medical and surgical care and with minor changes present the same problems in all age groups.

The social aspect of the subject, however, presents special problems. Many old people are cross and querulous because they feel left out of the social and economic life of their community. As their resentment increases, they become careless of their personal appearance and their manners. If this continues, they become physically dirty and develop obnoxious habits that further isolate them from society and consequently increase their loneliness and resentment. In our present civilization old age is looked on as an affliction, and a great deal of effort is expended in schemes for the care of the aged. If we directed our plans to preventing the distressing appurtenances of old age, many of the problems now demanding attention would be solved and the economic value of skills practiced over many years would add to our productivity.

The trite expression of "growing old gracefully" needs our special thought, and the advice given the patient must be carefully considered. Much of the success of gracefully growing old depends on measures instituted before a person is old.—Faber, *Texas State M. J.*, Jan. '53.

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## A SURGICAL VIEW OF THE PROSTATE

J. ULLMAN REAVES, M. D., F. I. C. S.

Mobile, Alabama

Certain fundamental principles are necessary in the management of a patient with prostatic obstruction. It is most important to take a careful history, and carry out a complete general examination in order to assay the patient's condition, to evaluate renal damage, and to detect the presence of associated disease, especially of the cardiovascular system. Blood examinations, including non-protein nitrogen estimations and Wassermann reactions, are done to supplement, not replace, clinical investigation. Only when there is evidence of renal insufficiency, when the patient is febrile, when the bladder is grossly over-distended, or when there is serious associated disease do I carry out preoperative preparation. If drainage is necessary, a catheter is passed, all urine drained off, and the catheter left in. I admit there are risks in doing this, but they are incidental to disturbing the very abnormal balance to which the patient has become accustomed, and it cannot be avoided by gradual decompression. I have never practiced gradual decompression, and it never was practiced in my intern days. I have never seen a case of suppression of urine followed by rapid emptying of an over-distended bladder. A thorough preoperative cystoscopic examination is made, and rectal palpation with cystoscope in situ, as well as a flat KUB and other roentgenography, if deemed necessary.

Due consideration must be given to any coexisting vesical or systemic disease. The importance of treatment of prostatic hypertrophy is emphasized by the five different surgical procedures which are in vogue today for relieving the obstruction caused by the pathologic gland.

I am willing to assume that any urologist, especially any young urologist with the nec-

essary skill to do major surgery, may master the technique of any of these procedures. It is believed by most urologists that when prostatic surgery is performed by competent men the various operative procedures carry about the same operative mortality, and each will relieve the symptoms caused by the obstruction, be it transurethral resection, or by perineal, suprapubic, retropubic, or possibly infrapubic enucleation. We have gained no appreciable ground in our efforts to avert prostatism, likewise the process is apparently irreversible by physical, chemical, or biologic means.

The young surgeon beginning transurethral removal of the prostate will probably rupture a few bladders, or perhaps make a few over-enthusiastic extirpations of tissue which may contain some of the vesical sphincter, but even this should not be an indictment against this valued method of attacking the enlarged prostate gland. The perineal operator will end up in the rectum more than once, or have a persistent perineal fistula, but, as his knowledge of the technique of this approach increases, his mishaps will be fewer and less damage will exist. Likewise, the surgeon proceeding transvesically may open the peritoneum or be the cause of a profuse hemorrhage. The proponents of the retropubic approach, as brought out by Millan, will not escape similar dangers before they become proficient in this technique, neither will the infrapubic route be free of danger to the neophyte.

The case presenting must be given the type of operation which will give the patient the best and most lasting result. Therefore a good urologist must be master of all techniques. For most of us it is harder to become a good resectionist than to resort to any of the other approaches, and the supra-



pubic transvesical enucleation is probably the easiest. This is as it seems to me. Others may differ with this opinion, as we do not all look at things through the same window.

In treating the geriatric patient who is suffering from prostatic pathology the passage of urethral instruments and catheters must be very gentle and without trauma. The passage of a catheter is not gently done in many cases, and trauma of even great magnitude can result in the not too gentle manipulation of urethral sounds, cystoscopes and even catheters. In one of my cases, that came in with the history of having had a metal catheter passed without results in emptying the bladder of urine, it was found that the urethral instrument had tunnelled through a carcinomatous prostate gland. I was met in the hall of one of our hospitals one day by a colleague who told me he had just had the experience of penetrating the bladder of a patient whose prostate he was massaging through the rectum. Both of these cases were handled gently but not gently enough.

The best way to prevent the necessity for the later use of sounds, instillations, irrigations, or even a second operation is by the application of the proper operative technique in a given case. This will also give the patient the ability to void freely, boldly, and without pain. This is what he desires, and he has little concern about how we approach the job of getting him well. His hope is to live through the operation, and next in order he hopes to be cured.

It is stated by some in the literature that late recurrent or persistent obstruction to the urinary outflow will be found occurring most frequently following transurethral resection. This has not been the case in my hands. I am of the opinion that many of the recurring cases would be met with if these patients lived ten or twenty years after surgery. One of my patients consulted me at age 73 with nine ounces of residual urine. Nine years previously this patient had been operated on for a right-sided inguinal hernia which came down on him as he was being taken out of the ambulance and put to bed in his own home from the hospital. When I saw him I found a grade IV irreducible hernia. In this case I elected to do a suprapubic enucleation of the gland, and leave the hernia alone. Eleven years later the patient, at the age of 84, came to me with urinary frequency, and a sound (28F. Walther) could be passed, but met with some resis-

tance at the vesical neck. During our work-up, urinary retention developed, and 2200 cc. of residual urine were found. He again entered the hospital and I elected to do a transurethral resection, removing sixty grams of tissue, mostly from a very large smooth right lobe. The catheter was removed on the third postoperative day and the patient was able to void, urine getting all over his enlarged scrotum. He was catheterized every eight hours and no more than 300 cc. of urine were obtained at any catheterization, so we decided upon another resection. Forty grams of tissue were removed at this time, and the patient left the hospital on the eighth postoperative day following the resection.

From the first operation at age 73 the pathologist reported an adenomatous prostate weighing 96 grams. The tissue from the second and third operations, which might be classified as a two-step transurethral resection, weighed collectively 100 grams. Fifty cc. of residual urine were present when he was allowed to go home for two weeks. The pathologic report on the resected tissue was grade IV adenocarcinoma of the prostate. He returned to the hospital for orchiectomy. At this time the recurrent right hernia was repaired, and both testes removed. Early ambulation was carried out, beginning fifty-four hours postoperatively, and recovery was uneventful. I have seven other cases of recurrent prostatism following enucleation, and the same percentage of recurrences following transurethral resection. I do not think that the type of operation has very much to do with recurrences, but rather that Father Time, in his own way, handles these and all other prostatic enlargements.

These patients are fast approaching three-score-and-ten, or have passed this allotted time, so late results and five-year cures lose most of their glamour, regardless of how well the statistics are analyzed or approached. I am of the opinion that prostates are toxic when enlarged, in the same manner that goiters are toxic. We have no way at present to measure this toxicity, or to find out if it is present in every case, but if by surgery we remove this toxic property, allowing nature to stabilize, and the patient is able to void boldly, thereby emptying his bladder in peace, much has been accomplished and the patient and his family are happy.

Van Antwerp Building

## INDICATIONS FOR AND DANGERS OF BARBITURIC ACID DERIVATIVES

WM. D. McNALLY, A. B., M. D.

Spring Hill, Alabama

Barbituric acid derivatives are the most widely employed sedatives and hypnotics, but since they are used in such large quantities, and are so easily obtained by the laity, acute and chronic poisoning is on the increase to an alarming degree. Since the introduction of barbital under the trade name Veronal by Fischer and von Mering, forty nine years ago, chemists have synthesized over 1500 barbiturates, of which less than twenty have survived the rigid tests of investigators for clinical use.

Statistics, following the International List of Causes of Death, report deaths due to barbituric acid and derivatives. Barbituric acid or malonyl urea does not possess hypnotic properties, and, as far as I have been able to ascertain, has not caused a single death. Therefore, deaths should be classified under the heading of barbituric acid derivatives. When the hydrogens on the carbon in position 5 are replaced by organic groups, then the barbituric acid becomes a hypnotic. Phenobarbital is the only one of this series which contains an aromatic radical. The replacement of oxygen, attached to the carbon in position 2, with sulphur produces the latest of this group, the thiobarbiturates. To some people the barbiturates are known as "Goof Balls," because of the reaction of many individuals to the drug. It might be interesting to note here the peculiar names given to the barbiturates by those desiring to purchase them without prescription from drug stores or peddlers, viz., Nembutal capsules—"Yellow Jackets"; Amytal—"Blue Jackets"; Seconal—"Red Jackets."

Names given to the barbiturates in New and Nonofficial Remedies of 1951 are going to be very confusing to the medical profession for some years to come. Fortunately, however, the average practitioner uses only one long acting and one short acting barbiturate and he will, therefore, soon learn the names given these two sedatives and will forget the others. The barbiturates may be classified on the duration of action for clinical use as given in Table I.

The therapeutic value of the barbiturate group of sedatives rests mainly upon the depressing action on the central nervous sys-

tem. The various types of barbiturates differ chiefly in the dosage in which they are effective, the speed of action, and the duration of their sedation. They are used extensively as sedatives and hypnotics in insomnia, hysteria, chorea, thyroid disease, epilepsy, neurasthenia and mental disturbances, and are dispensed in tablets, capsules and elixirs; and are found in combination with analgesic drugs for the relief of pain, although the barbiturates are not analgesic. They are used in hospitals in premedication before the administration of anesthesia for surgical operations, control of nausea in pregnancy, control of pain in labor, prevention and treatment of convulsions, and in psychiatric treatment. The degree of sedation in the patient can be controlled by appropriate dosage to produce a light sleep, or a deep coma. Sleep usually follows in twenty to thirty minutes after the administration of the drug. The effects of the barbiturate may be greatly exaggerated in cases of hyperthyroidism; therefore, the doses given a normal person might prove dangerous, or even fatal, to one with hyperthyroidism.<sup>1</sup> The administration of a barbiturate may cause restlessness, the reflex stimulation being influenced by a number of factors, such as pain, age, fever, thyroid disease or toxemia. The barbiturates are capable of inhibiting convulsions, as in strychnine poisoning, tetanus and status epilepticus. Phenobarbital is the drug chosen in the latter condition, as the other barbiturates do not possess its selective action upon the motor cortex. The first recorded use of sodium amytal to stop the convulsions of strychnine poisoning was that of Stalberg and Davidson in 1915;<sup>2</sup> the administration of the drug delaying the appearance of convulsions for 49 hours. This information was used in a recent murder trial in New York City to free a pharmacist on a charge of poisoning his wife.

From an examination of Table I it will be observed that the barbiturates are clas-

1. Purvis, S., and Willcos, William H.: *Lancet* 22: 66, 1934.

2. Stalberg, S., and Davidson, H.: *J. A. M. A.* 44: 1781, 1915.



TABLE I  
BARBITURATES AVAILABLE FOR CLINICAL USE ACCORDING TO DURATION OF ACTION

|              |   |   |
|--------------|---|---|
| Long         | Mephobarbital (Mebaral)                 | 32 mg., 0.1 Gm., and 0.2 Gm. tablets.   |
| Long         | Phenobarbital Sodium                    | 15 mg., 30 mg., 100 mg. tablets, may be given hypodermically in doses of 0.1 to 0.3 Gm. Caution: Aqueous solutions of phenobarbital are not stable but decompose on standing; when they are boiled, precipitation occurs.   |
| Intermediate | Aprobarbital (Alurate)                  | For mild cases of insomnia 65 mg.; in obstinate cases 0.13 Gm. may be given. The sodium salt of aprobarbital in solution is intended for oral or rectal use, particularly as preanesthetic medication.  |
| Intermediate | Butethal (Neonal)                       | 50 mg. to 0.1 Gm. ordinarily produces sleep.  |
| Intermediate | Diallylbarbital (Dial)                  | As a sedative 30 mg. three or four times a day; as a hypnotic 0.1 to 0.3 Gm. one-half to one hour before sleep is desired.  |
| Intermediate | Probarbital Calcium<br>(Ipral Calcium)  | As a sedative 0.13 to 0.26 Gm.; hypnotic 0.26 to 0.39 Gm. (Probarbital sodium tablets 0.26 Gm.)   |
| Intermediate | Butabarbital Sodium<br>(Butisol Sodium) | Average sedative dose 30 mg.; hypnotic dose 0.1 Gm.   |
| Intermediate | Vinbarbital Sodium<br>(Devinal Sodium)  | As a sedative 30 mg., repeated three or four times a day; as hypnotic 0.1 to 0.2 Gm. (Capsules 0.1 Gm., 0.2 Gm., and 30 mg.)  |
| Short        | Butallylonal (Pernoston)                | One tablet 194 mg. is given one-half hour before sleep is desired, preferably followed by glass of warm milk or lemonade.   |
| Short        | Allyl Barbituric Acid<br>(Sandoptal)    | For mild insomnia, 0.2 Gm.; for obstinate insomnia 0.4 to 0.8 Gm.   |
| Short        | Cyclobarbital (Phanodorn)               | Insomnia 0.1 Gm.; in obstinate cases 0.2 to 0.4 Gm. Do not repeat larger doses under 12 hours.  |
| Short        | Pentobarbital Sodium<br>(Nembutal)      | U. S. P. 0.1 Gm. as hypnotic. Average intravenous dose for adults 0.2 to 0.3 Gm., with 0.5 Gm. as the maximum.  |
| Short        | Secobarbital Sodium<br>(Seconal)        | 0.1 Gm. to 0.2 Gm. In obstetrics an initial dose of 0.3 Gm., followed by 0.1 to 0.2 Gm. at appropriate intervals never exceeding 1.2 Gm. in a 12-hour period.   |
| Ultrashort   | Hexobarbital Sodium<br>(Evipal Sodium)  | 2 to 4 cc. of a ten per cent solution is required to induce unconsciousness in adults. This is injected intravenously at the rate of 1 cc. every ten seconds. Caution: If the solution is discolored or shows presence of undissolved particles, it should be discarded even if freshly prepared. |
| Ultrashort   | Thiopental Sodium<br>(Pentothal)        | U. S. P. 2 or 3 cc. of a 2.5 per cent solution is injected intravenously in about ten or fifteen seconds.   |

sified clinically according to the duration of their action,<sup>3</sup> the short acting, like pentobarbital, taking effect rapidly, while the long acting phenobarbital sodium takes effect slowly, remaining in the system for a long time. Due to this latter property the physician should be more cautious in its administration. The author has found phenobarbital in the urine of patients nine days after the last administration of the drug. Small doses of the long acting barbiturates should be used in prolonged mild sedation

in such conditions as neurasthenia and epileptic convulsions due to the cumulative effect.

The short acting barbiturates are destroyed to a large extent in the liver. Four and one half hours after taking 3 grains of Nembutal, the urine of patients gave positive tests for the presence of a barbiturate. After six hours all chemical tests were negative. The short acting barbiturates should never be given to individuals with hepatic disease, nor to a patient with carbon tetrachloride poisoning as this solvent damages the liver to such an extent that the impaired

3. Tatum, A. L.: *Physiol. Rev.* 19: 462, 1939.

liver is unable to detoxify these drugs as readily as when in a normal condition. Physicians should not administer short acting barbiturates to chronic alcoholics because of the additional burden on an already depleted liver. This same caution applies to those with kidney dysfunction. As will be mentioned later, barbiturates are eliminated by two routes, the liver and the kidneys. Those which escape destruction in the liver in varying degrees are eliminated in the kidneys. If, however, the kidney fails to excrete the barbiturate, there is a cumulative toxicity which occurs only too often in those who use this type of drug daily. Where alcohol and barbiturates are both used at the same time there may be rapid death because of the cumulative action.<sup>4</sup> There is a synergistic action of alcohol and the barbiturates.

The barbiturates may be administered by mouth, rectum or intravenously. They are dispensed in tablet, capsule, and in solution. The margin of safety between the therapeutic and the toxic dose is fairly broad. Twenty to thirty times the therapeutic dose becomes dangerous. Moderate doses may produce lassitude, headache, vertigo and nausea. They are contraindicated in patients who become more restless after their use. Many reports of physicians deal with skin eruptions after prolonged administration. A true idiosyncrasy to the drug may be found in some patients, who, after small doses, develop such eruptions as urticarial, scarlatiniform, or morbilliform and may or may not be accompanied by itching, fever, weakness, vertigo and malaise. Confusion and psychotic tendencies become aggravated in patients with cardiac decompensation, or with infections, or after surgical operations following sedation with barbiturates.

Some patients having asthma or urticaria are allergic, which causes swelling of the eyelids, cheeks and lips, with an intense itching in addition to the skin disturbances noted above. Most of these cases clear up rapidly on discontinuance of the drug and the administration of a laxative. Occasionally, a fine bran-like desquamation appears upon the skin. After the skin disturbances are cleared up, an attempt to renew the barbiturate therapy, even in very small

amounts, will produce a recurrence of the skin lesions.

Mild cases of poison may develop in patients who use the barbiturates every day in larger than the therapeutic dose. These patients complain of nervousness, and there is a gradual loss of ambition, a marked impairment of their capacity to think or reason, and an increasing desire to sleep. Some have vertigo, ataxia, nystagmus and difficulty with accommodation and with the function of the ocular muscles, squint; and their speech becomes thickened, like a person under the influence of alcohol. There are tremors of the hands and even an ataxic gait; and failing memory, with slowness of thought and repetition of incidents. Personal appearance is neglected and they continually descend the ladder of life with marked social and emotional deterioration. The author knew a physician with a large practice who began using Nembutal, and who, in the course of several years, went from bad to worse, losing the respect of his family, his patients and his business associates. He had the appearance of a chronic alcoholic and finally died from the effects of the drug.

A chronic barbiturate user may develop symptoms that simulate the clinical picture of encephalitis lethargica, cerebral vascular thrombosis and acute psychic depression. The urine may show albumen and casts which usually clear up after cessation of the use of the drug.

The drug must not be withdrawn suddenly, even in cases of epilepsy, as the seizures become worse than before treatment was instituted, and convulsions follow.<sup>5</sup> The withdrawal symptoms in the chronically intoxicated individual may occur even if the dosage is reduced fifty per cent. As the symptoms of intoxication disappear, the patient becomes weak, and coarse tremors of the hands and face appear. The deep reflexes are hyperactive. Any stimuli applied may cause excessive muscular responses. There is a loss of appetite; patients cannot sleep, are nauseated, frequently vomit, and have abdominal cramps.

The patients look ill, lose weight from lack of fluid intake and a loss of body water from vomiting.<sup>6</sup> Isbell states "that between six-

4. Jetter, Walter, and McLain, Regina: *Arch. Path.* 36: 112-122, 1943; Dille and Ahlquist: *J. Pharmacol. & Exper. Therap.* 61: 385, 1937.

5. Bronstein, S. R., and Pacella, B. L.: *Psychiat. Quarterly* 17: 112-122, 1943.

6. Isbell, Harris: *Med. Clin. North America*, Vol. 34, No. 2, March 1950.



teen hours and the fifth day of withdrawal, but usually about the thirtieth hour, patients may have one or more convulsions which are typically grand mal in type." During the convulsions there may occur cyanosis, salivation, defecation and micturition.

The patients regain consciousness in a few minutes after the convulsion is over but seem confused, weak, have a slight fever, loss of appetite, and show signs of nervousness with a tremor. As these symptoms gradually disappear, in the course of two or three weeks recovery is complete, unless a psychotic patient is being dealt with. Many of these patients examined a year later are found to be normal and relate upon questioning that frequently business or domestic trouble caused them to become addicted to the use of a barbiturate.

*Symptoms of Poisoning:* As early as 1905 Kress<sup>7</sup> reported a number of poisonings, but since then they have rapidly increased in number. The reflexes and pupillary reactions in the patient given the average dose are retained or slightly exaggerated, while in poisoning the pupils are dilated with normal or slightly delayed pupillary reaction. (In morphine poisoning the pupils are generally pin-point in size, becoming dilated shortly before death.) There may be spasmodic movements of the iris, which is a favorable sign. The patient may also be cyanotic. An elevation of temperature may occur after the first day. The blood pressure may drop to 75 mm. Hg. systolic in serious cases, and the pulse may become very weak. Death, if it occurs early, is usually the result of paralysis of the respiratory center. If death is delayed, vasomotor collapse, pulmonary edema, or hypostatic pneumonia may follow acute poisoning from over-medication and frequently results in a fatal issue. The latter result, however, is more apt to occur from the long acting barbiturates. Bronchopneumonia may occur in a patient who has regained consciousness. The prognosis depends upon the amount and the type of barbiturate ingested. The longer the patient survives the better his chance for living. Curran<sup>8</sup> reports that barbituric acid compounds, when used in excess, cause a delirious, sometimes maniacal, confusion. Moore and Gray state that their use is attended by disorientation, speech dis-

turbance, nystagmus, absent reflexes, tremors of the hands, disturbances in gait, and ataxia. Seymour<sup>9</sup> believes that some cases of barbiturate poisoning may assume features of a manic-depressive psychosis; and that, in order to make a differential diagnosis, one must consider injuries of the head, brain tumor, cerebral hemorrhage, diabetic coma, syphilitic meningitis, uremia, alcoholism and encephalitis.

Hambourger,<sup>10</sup> in a study of suicides between 1928 and 1937 in a number of urban communities, shows that 8.1 per cent of all persons using poisons chose barbiturates, and in 1.25 per cent of all methods reported barbiturates were used successfully in committing suicide. Moore and Gray<sup>11</sup> report that in the Boston Psychopathic Hospital, between 1920 and 1932, 222 persons were admitted who were believed to have a psychosis due to drugs or exogenous chemical poisons. These constituted 0.97 per cent of all admissions. Barbiturates and morphine (usually in combination with alcohol and other toxic substances) were those mostly used. Alexander, Moore and Leary<sup>12</sup> show that for a period of ten years in Massachusetts there was a gradual increase in the number of deaths due to barbiturates from seven in 1928 to twenty five in 1937. During this period they collected 152 cases that came under observation. From the report of Hambourger<sup>10</sup> on 13 hospitals for the period 1928-1937, 10.8 per cent of all drug addictions were by barbiturates. In Goldstein's paper<sup>13</sup> 9.5 per cent of all addictions in 15 hospitals during the period 1940-1945 involved barbiturates.

In an attempt to obtain from the coroners of the various states statistics of deaths from the barbituric acid derivatives for the period 1939 to 1949 the author was forced to abandon this source of information for the lack of properly kept records. The coroners replied they did not have time to keep statistics, that they were working short-handed, or that verdicts were never specific as to the type of poison used, often reading

9. Seymour, W. Y.: U. S. Vet. Bureau Med. Bulletin 2: 1159, 1926.

10. Hambourger, W. E.: J. A. M. A. 114: 2015, 1940.

11. Moore, M., and Gray, M. G.: J. Crim. Psychopath. 2: 271, 1941.

12. Alexander, L.; Moore, M., and Leary, T.: J. Crim. Psychopath. 3: 100, 1941.

13. Goldstein S. W.: J. Am. Pharm. A. (Scient. Ed.) XXXVI: 4, 1947.

7. Kress, G.: Therap. Monatsh. 19: 467, 1905.

8. Curran, F. J.: J. Nerv. and Ment. Dis. 88: 163, 1938; 100: 142-169, 1944.

"acute accidental poisoning by solids or liquids." With the vast strides made in toxicology in the last quarter of a century and the teaching of pharmacology and toxicology in all of our medical colleges there can be no excuse for verdicts in this unscientific manner. The physician of the particular localities where these terms are used should have demanded the use of more explicit terms in the verdicts of these superannuated offices. A little more attention on the part of county medical societies could have remedied this condition years ago.

From the data obtained from the various state departments of health a table was prepared for the years 1939 to 1949. A few states were able to supply the data for the last five years. Others, like the state of Arizona, were unable to supply the requested figures. Time and space are not available at this time to give a detailed analysis of the table but the author wishes to call the attention of the medical fraternity to the seriousness of the barbiturate problem. For the period of ten years this survey found 6,191 deaths due to barbituric acid derivatives. The Federal Security Agency reported to me that barbituric acid and all of its derivatives caused 3,403 accidental deaths, while suicides numbered 4,364 or a total of 7,667 deaths. Taking from the author's table several examples of localities showing the increase, the county of Los Angeles had an increase in barbiturate deaths from 23 in 1940 to 175 in 1949. The total deaths for the period 1939 to 1949 were 837. In 1949 the total deaths were 278 (calendar year), 175 fiscal year, 448 in 1950, and 476 in 1951. New York had 878 barbiturate deaths from 1940 to 1948. During the year 1946 the Cook County, Illinois, Hospital had 151 admissions for barbiturate poisoning, while the Coroner's office reported 86 deaths. From the statistics obtained giving accidental and suicidal deaths, over half of the number were given as suicides. From the author's long experience in the Cook County, Illinois, Coroner's office many so-called "accidental deaths due to an overdose of sleeping pills" were actually suicides. This also applies to other sources of information. Therefore, if the inaccuracies of reporting could be eliminated, the number of suicides would be greatly increased. In New York City during the period 1946-1948 there were 270 suicides and 96 accidental deaths. The Medical Examiner of Essex County, N. J., gave 47 deaths for 1939-1949, with 33 listed as suicides or 70% of the total.

A study of the records of the Cook County Coroner's office and interviews with the Coroner's physicians and Deputy Coroners disclosed the fact that, on account of insurance, religious grounds, and social standing of the family, some deaths were reported as due to pneumonia instead of barbiturate poisoning, in spite of the history of an overdose of sleeping pills, a coma of several days duration, and with a toxicologic examination showing the presence of a barbiturate in an amount sufficient to have caused death.

TABLE II  
TOTAL PRODUCTION OF BARBITURIC ACID DERIVATIVES FROM STATISTICS COMPILED BY U. S. TARIFF COMMISSION

| Production<br>(Pounds) |         | Production<br>(Pounds) |         |
|------------------------|---------|------------------------|---------|
| 1941                   | 531,000 | 1946                   | 806,500 |
| 1942                   | 607,000 | 1947                   | 900,100 |
| 1943                   | 483,000 | 1948                   | 679,800 |
| 1944                   | 559,000 | 1949                   | 679,800 |
| 1945                   | 582,000 |                        |         |

In Table II the total production of the barbituric acid derivatives is given from statistics compiled by the U. S. Tariff Commission. The reduction in 1948 of 200,000 pounds from the high production in 1947 was due in part to the fact that barbiturates were exported, and this year the war torn countries resumed some of their former production of drugs and chemicals, including barbiturates. Taking the amount produced in 1950, calculated to grains, we have the enormous amount of 4,819,500,000 grains or 32.3 grains for every man, woman and child in the United States. A large amount of this production was undoubtedly used under medical supervision. How much was used without prescription and supervision would be difficult to determine until new methods of control are put into effect.

*Treatment:* The patient who is found in coma from the effects of the ingestion of a barbiturate should be taken to a hospital immediately. The patient's stomach should be washed out with a solution of potassium permanganate of a strength of about 1:3000, and repeated at least twice in four hours. A catheterized specimen of urine should be sent to the laboratory for a chemical analysis. The patient is placed in restraint and in a moderate Trendelenburg position to promote cerebral circulation. Intravenous injections of 5% glucose in normal saline solution should be given as this not only aids in diuresis but also aids in detoxifying the



poison. (If there is a nephritis present, or an anuria from the drug, caution must be used with the saline solution as an edema may develop.) Into the rubber tubing or latex carrying the above solution inject three milligrams of picrotoxin. If there is no response within fifteen minutes, inject six more milligrams of picrotoxin. This dosage of picrotoxin may be repeated every half hour until pupillary and corneal reflexes appear. (Caution must be used not to give an excess of the picrotoxin which might cause convulsions.) In a very stubborn case 876 milligrams were administered during a six-day period, and the use of Salyrgan theophylline to lessen the pulmonary edema and inhalations of oxygen were important therapeutic measures.<sup>14</sup> Tracheal and pharyngeal aspirations should be performed at hourly intervals to remove the thick, purulent, tenacious material. Give antibiotics and sulfadiazine to control the temperature and the pulmonary edema. Although Coramine was used over twenty years ago it has not proved to be popular. In some cases where picrotoxin did not seem to act fast enough, the author has given repeated doses of metrazole. It has none of the cumulative effects of picrotoxin and does not cause convulsions. Massive doses of Dexedrine and Benzedrine may be given to narcotized patients without causing convulsions.<sup>15</sup> Barrett<sup>16</sup> recommends the use of an 18 per cent sodium succinate solution, giving 3 to 5 cc. intravenously at the rate of one cc. per second. Because of the ease of access of picrotoxin the author has used this successfully in treating over 150 cases of barbiturate poisoning.

While waiting for the chemical analysis, an electro-encephalogram could be taken. "It has been observed that individuals rendered unconscious by the barbiturates present a remarkably homogenous electro-encephalogram pattern. This pattern can be clearly differentiated from the recordings obtained in comatose states induced by all other agents and patho-physiologic mechanisms that have come under our observation."<sup>17</sup>

14. McNally, Wm. D., and Nickless, J. A.: *Med. Record* 159: 293-294, 1946.

15. Friedman, H. A., and Harris, Stanley C.: *Am. J. M. Sc.* 221: 133, 1951.

16. Barrett, R. H.: *Ann. Int. Med.* 31: 739, 1949.

17. Katzenclenbogen, S., and Cohn, R.: *Dis. Nerv. System* 4: 188, 1943; Cohn, R.; Savage, C., and Raines, G. N.: *Ann. Int. Med.* 32: 1049-1065, 1950.

A question uppermost in your minds probably is: "What can the medical profession do about this problem?" A physician, through his county medical society, can ask the State Legislature to enact more stringent laws controlling the sale of barbiturates, making use of the police powers of city, county and state for the enforcement of the regulations rather than Federal legislation. Secondly: A physician can be more cautious in giving prescriptions for barbiturates and should exercise discretion in granting refills.<sup>18</sup> Thirdly: A program is necessary to educate the medical, dental and pharmaceutical professions that the barbiturates are useful drugs and at the same time dangerous. Fourthly: A new method of classifying deaths by poison should be introduced in all states, abolishing the meaningless expression, "death by solids, liquid or gas." Death certificates for this poison should read, "Death by barbituric acid derivative." Where the type of poison is known, it should be given. In this way, future surveys will be much easier for the investigator in tabulating barbituric acid derivative deaths, and give the medical profession a truer picture of the serious problem confronting it.

18. McNally, Wm. D.: *J. Michigan M. Soc.* 41: 635, 1942.

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**The General Practitioner**—The general practitioner, which you represent, is closest to the heart of America of any group unless it is the ministers. Occasionally we are even closer than they are. The medical profession has been sold down the river by the socializers, but this has been directed more against the specialist than against the family doctor. The socializers have had little luck in convincing the American people that their personal physician is a reprobate, a money-grabber, or a dud. During these years in their attempts to belittle the medical profession, their arrows have been directed at others than the general practitioner. Of course, we are part of that great profession, but it is within our power to restore the faith that the American people once had in their doctors. We are so close to the patients we treat that many times we are able to straighten them out in their way of thinking.

The integrity, the honesty, and the morality of the family doctor is still largely unquestioned. It is up to us to impress upon the public that we represent a large and probably the most important segment of the medical profession as a whole. The specialist, as important as he is, and we cannot do without him, should be our assistant in the care of the sick and afflicted. If we stick to our ideals and continue in our present trends, we may help save America.—*Sanders, South M. J., Feb. '53.*

## TREATMENT AND PROGNOSIS OF AMEBIASIS

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Amebiasis has a most inconstant and baffling symptomatology. It may infect the colon, seemingly doing no harm, or it may run a fulminating course leading to death within a few days. Despite its prevalence, there are wide differences of opinion regarding the disease. The physician who diagnoses amebiasis infrequently will be skeptical of his colleague who reports large numbers of cases discovered in a routine practice.

The clinical manifestations of amebiasis vary with the climate, state of nutrition, hygienic surroundings and, possibly, the dietary habits of the individual. In the Central Gulf Coast Region of the Southern United States intestinal amebiasis is common; however, severe manifestations of the disease are relatively uncommon. Those infected have a large number of symptoms, often completely unrelated to the gastro-intestinal tract. A great majority of those with amebiasis in this region are only mildly symptomatic and some are completely asymptomatic at the time of examination.

In communities where *E. histolytica* infection is prevalent, often a patient will have associated organic or functional disease which is responsible for the symptomatology. The signs and symptoms of the associated disease will be confused with, and mistaken for, signs and symptoms of amebiasis. When one is faced with the problem of determining the significance of *E. histolytica* in the stool of a patient presenting an atypical group of symptoms, the existing literature is of little aid. This is not so much true with severe amebic infections in which large numbers of trophozoites are found, but with the more benign intestinal infections passing only cysts, giving rise to few or even no symptoms at the time of the examination. This study is concerned with the latter group. Private patients are more likely to seek medical advice before signs and symptoms of a disease become pronounced. Among this group the manifestations of amebiasis are often minimal. Craig and Faust's Clinical Parasitology<sup>1</sup> states

that the following signs and symptoms may result from amebiasis:

TABLE I

1. Constipation
2. Diarrhea
3. Underweight or weight loss
4. Pains in abdomen (general or localized)
5. Gaseous eructations after eating
6. Slight nausea and anorexia
7. Capricious appetite
8. Neuralgic pains in lower abdomen, back of legs or neck
9. Poor memory and lack of ambition
10. Unstable pulse
11. Vasomotor disturbances and sweating palms and soles
12. Nervousness
13. Tachycardia
14. Sallow skin
15. Dull frontal headache

It is immediately apparent that these are the most frequent symptoms seen by the internist and general practitioner. Many are considered as manifestations of functional disorders or neuroses. It was proposed to study a large number of such patients for the presence of *E. histolytica*. All cases of amebiasis were to receive adequate therapy and be followed for a period of one year. Since most studies of amebiasis do not follow the cases this long and since most do not make the distinction between the mildly symptomatic cyst passer and the more acutely ill trophozoite passer, this investigation was considered worth while.

### Material and Method

If a patient complained of any of the symptoms and signs enumerated in Table I, a careful stool and sigmoidoscopic examination was ordered. The patient was instructed to take four teaspoonsful of Fleet's Phospho-Soda the night before and to collect a watery stool specimen the following morning. After this, a 1,000 cc. saline enema was taken and expelled. Shortly thereafter a second saline enema was taken. A specimen from the last portion of this enema was also collected. The two specimens were brought immediately to the office. Upon arrival at the office, a careful sigmoidoscopic examination was done. With a suction bulb attached to a glass tube flecks of mucus or suspicious areas were aspirated. The purge specimen, the enema specimen, and the aspirated specimen were immediately subjected to examination in the following manner:

Read before the Association in annual session, Montgomery, April 18, 1952.

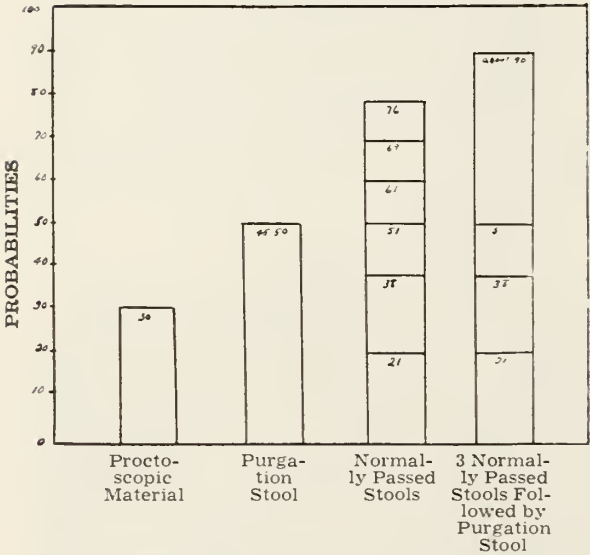
1. Craig, C. F., and Faust, E. C.: Clinical Parasitology, 5th ed., Lea & Febiger, Philadelphia, 1951.



- 1. Saline film
- 2. Film stained with D'Antoni's iodine
- 3. Zinc sulphate centrifugal flotation method

According to the probabilities for detecting amebiasis as worked out by Sawitz,<sup>2</sup> the purgation stool, plus the enema specimen, plus the sigmoidoscopic material should give approximately 90% accuracy in detecting the positive cases.

TABLE II  
PROBABILITIES OF DETECTING AMEBIASIS  
by  
Direct Fecal Film and Zinc Sulphate Centrifugal  
Flotation



All positive cases were given antiamebic treatment. Clinical reevaluation and stool examination by the above method was repeated at the end of six weeks, three months, six months and one year.

All positive cases were initially given antiamebic treatment by one of two methods:

- 1. Milibis, 500 mg., three times daily for 16 days, followed by Aralen, 125 mg., twice daily for 30 days, followed by a second course of Milibis and then a second course of Aralen.
- 2. Terramycin, 500 mg. every six hours for ten days.

If, during repeat examinations, relapses and or reinfections were found to have occurred, additional therapy was given as will be indicated below.

Results

Table III shows the results of examinations of 357 patients who complained of the above mentioned symptoms and were only mildly symptomatic:

2. Sawitz, W. G.: The Diagnosis of Amebiasis, Clinics 2: 828 (Dec.) 1943.

TABLE III

| Sex    | Number Examined | Number Positive | Percent Positive |
|--------|-----------------|-----------------|------------------|
| Male   | 140             | 35              | 25 %             |
| Female | 217             | 50              | 23 %             |
| Total  | 357             | 85              | 23.8%            |

Age group, 5 to 79 years; median age, 38 years.

It was noted early in the study that those with stools containing motile forms of *E. histolytica* were definitely ill. Of the 85 positive cases discovered in this group, no motile *E. histolytica* were found despite conscientious search. This is not to infer that motile *E. histolytica* were absent but with those mildly symptomatic and asymptomatic patients motile forms were rare.

The rectal and sigmoid walls appeared normal in all cases except two. In both these, mature polyps were found. No acute or chronic ulceration was found. No scarring from previous ulceration was noted. X-ray examination of the colon was done on 27 of the 85 positive cases. Nineteen showed no abnormalities. The remaining eight cases showed what is usually considered as functional colonopathy—spasticity, mucus strings coated with barium, loss of haustrations, etc. No evidence of ulceration was noted in any case. The three technicians who participated in this study were of the opinion that the sigmoidoscopic specimen was the most likely to be positive. A summary of 137 chief complaints of 85 *E. histolytica* cyst passers is shown in Table IV.

TABLE IV  
LIST OF 137 MAJOR COMPLAINTS OF 85 CASES  
OF CYST PASSERS

|  |    |
|--|----|
| Malaise, weakness and nervousness .....        | 47 |
| Soreness, pain and discomfort in the abdomen:  |    |
| Generalized .....                              | 18 |
| RLQ .....                                      | 4  |
| LLQ .....                                      | 4  |
| Upper abdomen .....                            | 3  |
| RUQ .....                                      | 1  |
| Constipation .....                             | 21 |
| Flatulence and sensitivity to many foods ..... | 16 |
| Diarrhea:                                      |    |
| Intermittent .....                             | 9  |
| At some time in the past .....                 | 5  |
| Anorexia and unable to gain weight .....       | 3  |
| Paroxysmal tachycardia .....                   | 2  |
| Aggravated epilepsy .....                      | 2  |
| Pyrosis .....                                  | 1  |
| Aggravated migraine .....                      | 1  |

The most common complaints were those of anxiety, inability to relax, malaise, weakness and nervousness. The chief complaints were variously worded in the all too familiar

terms of the somatic conscious neurotic. Roughly one-half were in this group. Abdominal discomfort of a generalized nature was more frequent than localized pain. Sustained pain with occasional twinges of severe pain and a feeling of deep soreness rather than localized pain or discomfort was the rule. Localized right lower abdomen pain, when present, was significant although it was relatively uncommon. Constipation only of the most obstinate type was listed. Many more with mild constipation relieved by simple dietary measures were not included. A favorable change in the bowel habits after treatment was seen in 15 of the 21 cases. Flatulence and sensitivity to many foods were seen in approximately one-fifth of those positive. Often the complaints and physical findings closely resembled gall-bladder and peptic ulcer syndromes. This was especially true in those with upper abdominal discomfort. Many dramatic recoveries from long standing complaints were made among this group.

Diarrhea was noted in 14 cases in the mildly symptomatic group. The stools were thin, and, as a rule, contained mucus. Bloody diarrhea was seen only in the acutely ill. These were not included in the study.

Two of the three patients who complained of anorexia and inability to gain weight were not benefited. One developed a normal appetite and was asymptomatic within six weeks. One man, 28 years of age, got relief from disturbing attacks of paroxysmal tachycardia. A woman, age 43, was not relieved. A 13 year old girl with fainting spells and a severe electro-encephalographic dysrhythmia did not respond satisfactorily to analeptic drugs until amebiasis was discovered and treated. Another epileptic with amebiasis received no benefit from antiamebic treatment. We were unable to evaluate the result of treatment on the one case of pyrosis. This 54 year old woman had so many neurotic complaints that we were unable to evaluate the effects of treatment. One very neurotic 47 year old woman with frequent debilitating attacks of migraine noted a diminution in the number and severity of her attacks with less nausea and vomiting during the attacks.

The results of treatment of 63 patients passing cysts of *E. histolytica* with Milibis and Aralen are shown on Table V.

TABLE V  
RESULTS OF TREATMENT OF 63 CASES PASSING  
CYSTS OF *E. HISTOLYTICA* WITH MILIBIS AND  
ARALEN

| Stool              | 6<br>Weeks | 3<br>Months | 6<br>Months | 1 Year |
|--------------------|------------|-------------|-------------|--------|
| Negative .....     | 59         | 55          | 56          | 51     |
| Positive .....     | 1          | 2           | 1           | 5      |
| No follow-up ..... | 3          | 6           | 6           | 7      |

There were nine relapses in seven patients. One patient was positive at the end of six weeks and again at the end of three months. He was clinically improved. He did not return for the six months and one year recheck. One patient relapsed at the end of three months and again at the end of one year.

The retreatment program consisted of the simultaneous administration of Aralen, 250 mg. twice daily, and Milibis, 500 mg. three times daily for 16 days. No serious side effects were observed from any case receiving Milibis, although occasional complaints of mild nausea and abdominal discomfort were noted. These were usually relieved by the administration of a saline cathartic every fourth or fifth night. One additional side reaction observed in an occasional case was swelling of the feet and ankles for the first few days of treatment with Milibis. The explanation for this phenomenon is unknown. The edema usually subsided after a few days of therapy. Loose stools or diarrhea was noted occasionally. This, too, passed away within a few days after onset of therapy. No specific treatment is recommended for this other than occasional doses of paregoric to control the symptoms if they become severe.

Aralen had to be discontinued in six cases due to dizziness, nausea and anorexia. These complaints were distressing and frequently observed if the dose was above 125 mg. twice daily. The symptoms were relieved somewhat by the administration of bile salts in small doses. In those cases with enlargement of the liver, Aralen was especially difficult to administer, making bile salts quite necessary for the comfort of the patient.

Twenty-two of the cyst passing group were treated with Terramycin, 500 mg. four times daily for ten days. If, on reexamination, the stool was positive, retreatment was given. This consisted of the simultaneous administration of Terramycin, 500 mg. four times daily, Aralen, 250 mg. twice daily, and Milibis, 500 mg. three times daily for ten days. The result of this study is shown in Table VI.



TABLE VI  
A 1 YEAR FOLLOW-UP STUDY OF 22 CASES PASSING  
CYSTS OF *E. HISTOLYTICA* TREATED WITH  
TERRAMYCIN

| Stool        | 6<br>Weeks | 3<br>Months | 6<br>Months | 1 Year |
|--------------|------------|-------------|-------------|--------|
| Negative     | 18         | 20          | 16          | 17     |
| Positive     | 4          | 1           | 4           | 1      |
| No follow-up | 0          | 1           | 2           | 4      |

A total of nine patients relapsed during the year. Only one patient relapsed after retreatment with Terramycin, Aralen and Milibis simultaneously.

Three patients were unable to tolerate Terramycin due to nausea, epigastric discomfort or diarrhea. Many had some discomfort which could be relieved by eating beforehand or by drinking buttermilk with each dose. Diarrhea or loose movements were occasionally observed which could be relieved by taking buttermilk. One woman developed a red, sore tongue which was relieved by large doses of oral vitamins. Another developed moniliasis of the vagina which caused pruritus and discomfort.

The clinical response to all forms of treatment is shown in Table VII.

TABLE VII

|                 | Passing<br>Cysts | Stool<br>Neg. | No Follow-Up<br>Stool Exam. | Total | Percent. |
|-----------------|------------------|---------------|-----------------------------|-------|----------|
| Asymptomatic    | 0                | 29            | 5                           | 34    | 45%      |
| Improved        | 7                | 9             | 3                           | 19    | 25%      |
| No improvement  | 1                | 10            | 4                           | 15    | 20%      |
| Unable to eval. | 1                | 7             | -                           | 8     | 10%      |

It is obvious that the vague term "improved" is unsatisfactory but many gradations of response would have been confusing. When the response was less than complete restoration of normal health yet definitely benefited by treatment, the patient was classed as improved. If there was doubt, the patient was placed in the next lower category. In this study, 45% of those treated became free of their presenting complaints five to 20 days after beginning antiamebic treatment. Twenty five per cent stated that they were definitely improved but not free of all of their original symptoms. No more than 70% of the mildly symptomatic or asymptomatic group passing cysts could be considered as receiving benefit from antiamebic therapy. In view of the large emotional factor in those with vague complaints of the type enumerated, one can not draw too many close conclusions. Some of those

doubtless were influenced by suggestion alone. Emotional instability and unreliability rendered impossible the evaluation of eight of those studied.

Discussion

The study by Faust<sup>3</sup> of the intestinal tract of "normal" accident victims is often quoted to support the theory that all who are infected are suffering from tissue invasion and are symptomatic. In this study 202 accident victims were autopsied within four hours after death and the colons inspected. The stools were carefully examined. Thirteen were found to have positive stools but in only seven was it possible to demonstrate lesions of the mucosa of the colon. Some tissue invasion doubtless is necessary for growth of *E. histolytica*. However, the very superficial mucosal erosions reported by Faust<sup>3</sup> are probably not sufficient to give any clinical response until the deeper layers of the bowel are involved and possibly secondary bacterial invasion has taken place.

The complaints enumerated in Table I are heard from a great number of patients seen by the Internist. If these symptoms can be produced by *E. histolytica* infection, it follows that all with such symptoms should have a stool examination. If the stool examination is to be of value it must be properly collected and expertly examined. In this series only those ambulatory office patients who were not acutely ill and complaining of those symptoms listed in Table I were included. Twenty three and eight tenths (23.8) per cent were found to be passing cysts of *E. histolytica*. No trophozoite passers were found. Only 70% of those treated could be considered as receiving any benefit from antiamebic treatment. Probably less than 70% were actually having symptoms due to amebiasis since some were doubtless improved by suggestion alone. Only 45% were relieved completely of the main presenting complaints.

The symptom complex produced by minimal *E. histolytica* infection can be seen in many stress-producing conditions. The inconstant nature of this infection makes diagnosis difficult. One is, by necessity, too dependent on the microscopic examination of the stool. Even in skilled hands this has at least a 10% error.

The state of nutrition probably affects the extent to which a patient becomes infected

3. Faust, E. C.: Amebiasis in the New Orleans Population as Revealed by Autopsy Examination of Accident Cases, Am. J. Trop. Med. 21: 35, 1941.

with *E. histolytica*. The influence of the diet on the clinical picture has been shown by Alexander and Meleney,<sup>4</sup> Elsdon-Dew,<sup>5</sup> Faust<sup>6</sup> and others. Vitamin C (Sadun et al.<sup>7</sup>) deficiency probably also lowers the resistance to infection. It is supposed that heaviness of infestation affects the degree of clinical response.

In dealing with a knotty diagnostic problem in one who has vague complaints of the type given in Table I, the clinician is often led into a diagnostic error when an occasional *E. histolytica* cyst is found in the stool. Although all such patients should be promptly and adequately treated for amebiasis, one should not feel secure in the diagnosis until the patient has shown relief from his complaints. If the symptoms persist one should search for another explanation. On the other hand, there are a great number of patients with complaints resembling functional disorders who are in reality suffering from amebiasis and can be relieved if properly treated.

In the treatment of the mildly symptomatic cyst passers, the combined use of Milibis and Aralen seems to give a better chance of cure than does Terramycin alone. Although the data on Aureomycin is not included here, in our hands it has an even higher relapse rate than Terramycin. One may see occasional cases successfully treated by this or that antiamebic agent where others have failed. In general, however, treatment with a single antiamebic agent is unsatisfactory. The simultaneous use of Terramycin, Aralen and Milibis seems to be the most effective combination we have tried. Many months of observation are necessary in the evaluation of any antiamebic agent.

Outside of institutions, where the environment can be rigidly controlled, it is almost

impossible to decide when a recurrence of amebiasis is a relapse or a reinfection. All cases in this study were living in the original environment and subject to the same hazards of infection as before treatment.

All members of a family group who have one or more members infected should be examined. This is especially urgent if the infected member is a food handler. Perhaps it is wiser to treat all members of a household when cost of the drugs is not a factor. In our experience the relapse and/or reinfection rate is high in those living in a family group in which some member remains untreated.

#### SUMMARY

A study of 357 mildly asymptomatic private patients showed 85 (23.8%) to be positive for *E. histolytica*. No trophozoite passers were found in this group.

Malaise, weakness and nervousness were seen in one-half, abdominal discomfort was seen in one-third, constipation in one-fourth, flatulence and food idiosyncracies in one-fifth and diarrhea in one-sixth of those positive.

Milibis and Aralen seem superior to Terramycin alone in the treatment of *E. histolytica*. Simultaneous administration of all three of these drugs over a period of ten days was the most effective combination tried.

Seventy per cent or less of the mildly symptomatic group of *E. histolytica* cyst passers were benefited by treatment.

Startling and dramatic recoveries were seen in many patients who had been hitherto considered neurotic.

Many months of observation is necessary for the proper evaluation of any form of *E. histolytica* therapy.

#### CONCLUSIONS

1. Mildly symptomatic patients usually pass only cysts of *E. histolytica*.

2. Among this group 70% or less will be benefited by adequate antiamebic therapy and apparent cure. Despite this, antiamebic therapy is no less urgent since the infection is dangerous to the host and his contacts.

3. Associated diseases should be looked for even though *E. histolytica* are present in the stool.

4. The simultaneous administration of Milibis, Aralen and Terramycin was the most effective combination of antiamebic drugs used.

458 Government Street.

4. Alexander, Frank D., and Meleney, Henry E.: A Study of the Diets in Two Rural Communities in Tennessee in Which Amebiasis Was Prevalent, *Am. J. Hyg.* 22: 704, 1935.

5. Elsdon-Dew, Ronald: Endemic Fulminating Amebic Dysentery, *Am. J. Trop. Med.* 29: 337, 1949.

6. Faust, E. C.; Scott, L. D., and Swartzwelder, J. C.: Influence of Certain Foodstuffs on Lesions of Endamoebic Histolytica Infection, *Proc. Soc. Exp. Biol. and Med.* 32: 540, 1934.

7. Sadun, Elvio H.; Bradin, John L., Jr., and Faust, E. C.: The Effects of Ascorbic Acid Deficiency on the Resistance of G. Pigs to Infection with *E. Histolytica* Infection of Human Origin, *Am. J. Trop. Med.* 31: 426, 1951.



## RECENT ADVANCES IN TEMPORAL BONE SURGERY

E. R. NODINE, M. D.

Montgomery, Alabama

In looking over the literature and in personally recalling the surgery performed on the temporal bone twenty-five years ago, it is interesting to note the changes to date.

I can remember the mastoidectomies performed at the New York Eye and Ear Infirmary during the twenties. They were at best but hit-and-miss excavations of the temporal bone, with fingers crossed, hoping that the facial nerve would not be hit or injured. The operative field was extremely bloody, not conducive to good vision of the area, and of course the incision was a long postauricular affair which took weeks to heal, often leaving a fistula. The radical mastoidectomies were dry permanently in about 50% of cases.

What was the trouble? The answer was that the structures were not satisfactorily visualized, hence not properly removed when needed.

In 1930 Julius Lemberg of New York introduced the endaural method of approach to the mastoid bone. This consists of three incisions joining one another. The central skin flap is preserved for replacement at the end of the operation. (Fig. 1.) The skin is



Fig. 1. The skin flap is being rolled free from the incisions.

now elevated around the periosteum and an exposure is seen as in Fig. 2. This gives the advantage of a clear-cut view of all important landmarks.

The next step, which was a vast improvement over chisels and gouges, was the opening of the mastoid antrum with the cutting burr of a dental engine. This lends smoothness and finger-tip control of all operations



Fig. 2. The dental drill is being applied.

on the bone. There is also less cranial shock and the postoperative headache is nil.

Complete exposure of the inner mastoid structures can be obtained by the drill method, followed by irrigation and suction of bone sand and blood. (Fig. 3.) This process



Fig. 3. Complete exposure of structures.

is of course aided by the operator wearing a strong electric head light and magnifying loupe.

The exposure allows the operator to see without doubt every important structure and the opportunity to remove any diseased tissue observed.

One of the commonest causes of failure to obtain a dry ear in the old procedures of radical mastoidectomies was the overlooked infected muco-periosteum of the middle ear. This can now be elevated and removed through the wide exposure.

Another common cause of a persistent wet ear was the leaving of the infected tensor tympani muscle in its bony shell. This should be removed as shown in Fig. 4.

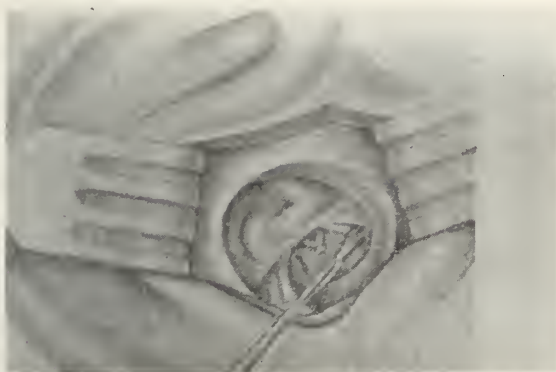


Fig. 4. Tensor muscle being extracted.

Through this wide exposure it is possible to drain any intracranial abscess of otic origin since rubber tubing can be introduced easily in the middle or posterior fossa area. (Fig. 5.) Sinus thrombosis can also be dealt with via this route.

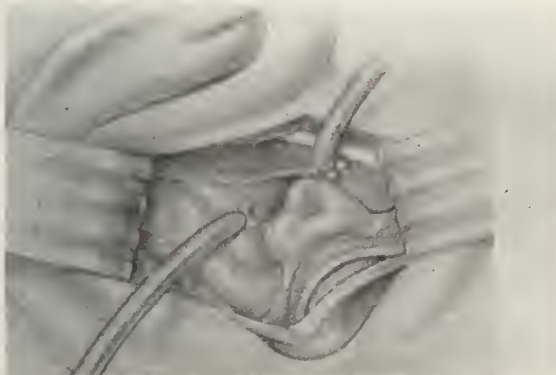


Fig. 5. Tubes for abscess drainage.

Injury to the facial nerves or decompression of this member is comparatively simple if this technique is applied, since the course of the facial nerve is easily seen. If necessary the nerve may be elevated from the bony canal and sutured re-routing it anteriorly. (Fig. 6.)

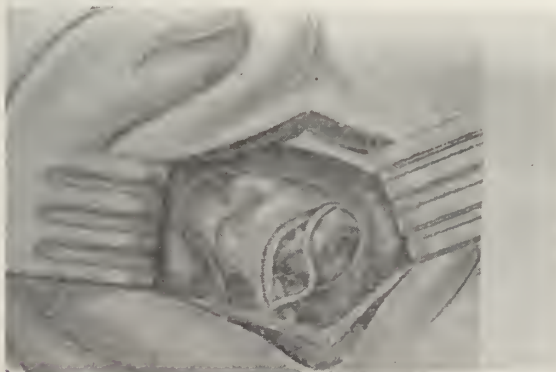


Fig. 6. Re-routing facial nerve.

This incision is of course the one used originally by Lembert in the performance

of the one stage fenestration operation for otosclerosis. In Europe this was a formidable two-stage operation until the endaural approach was perfected.

#### SUMMARY

It is demonstrated that the endaural incision is by far the superior approach to all operations upon the temporal bone, viz.,

- (a) radical mastoidectomy,
- (b) fenestration operation,
- (c) repair of facial nerve, and
- (d) brain abscess drainage of otic origin.

**Medicine in Great Britain**—What is the attitude of the British? I had the opportunity of talking to well over 150 physicians briefly, and with 66 at length during my stay in Great Britain. Of these 66, who were a cross section of the various areas of the country, I did not find one who likes the National Health Service as it is now in effect. Nearly all felt that it was well to have a Health Service Plan, and that broader scope of care is necessary. They all agreed that the threatened blast of thunder that occurred was wrong. Each said that the British Medical Association had let down the physicians. This all apparently stemmed from the fact the officers in the British Medical Association stimulated various meetings in an effort to combat this possibility but suddenly, starting from the top and going on down, they all began to decide they would take the socialized plan rather than be left out in the cold.

I had the opportunity of meeting several physicians who would not join the plan and who have continued to go on with a very adequate livelihood—thus the fear of being left was not necessary. Talking with the physicians as to how their problem might have been resolved, I find that it comes to the same thing that we have here in the United States. They feel they should not have been negative in their approach, but rather should have set up earlier a definite plan which was acceptable, far less expensive, and proposed it before the group who enforced the legislation had the opportunity.

It is impossible to compare Great Britain with the United States in any way. Tradition, attitude, government, size, and production, are all different. The one analogous lesson which is quite evident is that we should set up a plan and have it ready as soon as possible.

Interestingly enough, all the socialization factors in Britain show no apparent progress. Railroads are in horrible shape, medical care, as I mentioned, certainly is not what it should be, the roadway system which was set up for truck transportation, proved to be more expensive than it was under private enterprise. One can go on indefinitely with the pros and cons. General physicians, with the exception of those who practice in the industrial areas, are not pleased with the situation.—Fox, *Journal-Lancet*, Feb. '53.



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## GAMMA GLOBULIN HAS PROMISE

Incidence of poliomyelitis reached a staggering all-time high in 1952. Yet, despite this bleak fact, 1952 has also been a year of promise. A beginning has been made in the development of a practical preventive for polio.

Among the significant research findings in the past twelve months was the discovery by Dr. Dorothy Hortsman of Yale University Medical School and Dr. David Bodian of Johns Hopkins that poliomyelitis virus could be found in the blood stream of cynomolgus monkeys and chimpanzees four to six days after they had been fed polio virus. Hortsman and Bodian found that during this brief viremia phase, antibodies are also developed in the blood. In a few animals sufficient antibody developed to prevent paralysis. In others, the amount of antibody was either insufficient or its development was too slow to ward off paralysis. However, it was discovered that by slightly increasing the amount of antibody present in the blood, paralysis could be prevented until the animal had time to develop its own active immunity to the disease. In monkeys, the time interval between the appearance of virus in the blood and the development of paralysis varied from three to seven days.

Viremia in humans has been observed on only two occasions—once in a girl nine years old and once in a man of 29. Yet it was felt that because of the similarity between the laboratory disease in animals and the naturally acquired disease in man, it might also be a constant part of the human disease picture that polio virus regularly circulates in the blood a week or more before the onset of paralysis. If this were true, by giving antibodies to humans just prior to or just after infection it might be possible to prevent the development of paralysis.

This hypothesis was tested in 1951 and 1952 by Dr. William McD. Hammon, Professor of Epidemiology of the University of Pittsburgh Graduate School of Public Health, and his co-workers in large scale controlled field studies. These studies were made during polio epidemics in Utah, Texas and Iowa. 54,772 children aged 1 to 11 took part in these studies. Half of them received injections of gamma globulin and half an innocuous substitute.

Since, to be effective, gamma globulin must contain antibodies against all three im-

munological types of polio virus, it was obtained from the American National Red Cross and was prepared from blood collected during World War II from tens of thousands of donors in different areas of the country.

In his preliminary report, covering a thirty-day follow-up of the ninety paralytic cases which occurred in the 54,722 children who took part in the test, Dr. Hammon disclosed that 26 cases occurred in those receiving gamma globulin injections as compared to 64 cases in the group which did not get the protective substance. These numbers are statistically significant. Dr. Hammon emphasized that marked protection did not begin until the second week after inoculation and lasted through the fifth week. During the second week, the number of polio cases in the gamma globulin group was three and in the control group, twenty-three. From the second week through the fifth week, only six cases occurred in the gamma globulin group, while thirty-eight appeared in the control groups.

In the first week little, if any, protection was observed. Nearly as many cases occurred in the gamma globulin group as in the control group. However, the cases were mild and within thirty days, half of them had completely recovered as compared to none in the control group. Dr. Hammon believes this indicates that gamma globulin may, during the late stages of the incubation of polio, modify the severity of the disease although it fails to give complete protection.

Further laboratory investigations and statistical studies must be made before a final evaluation of the role of gamma globulin in preventing paralytic polio can be made.

There is also the question of the availability of gamma globulin. The present supply suitable for polio prevention use is extremely limited and completely inadequate to meet expected demands. The American National Red Cross has undertaken to step-up its National Blood Program in an effort to increase the supply. The National Foundation has enlisted the aid of other national organizations to devise a plan to allocate whatever gamma globulin is available to epidemic areas next summer.

In the meantime, research must continue. Gamma globulin gives only temporary, passive immunity. A safe vaccine which will provide lasting immunity is still to be devel-

oped. Since 1938, the National Foundation has allocated some \$18,000,000 from March of Dimes funds for research through 696 grants to 111 institutions. In 1952 alone, almost \$3,500,000 was spent on research. We are going to have to spend more before the final answer is reached.—*From the Polio Post.*

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#### COST OF HOSPITAL CARE

Progress in national studies on the problem of financing America's hospital care is described by the Commission on Financing of Hospital Care in a report just released.

The cost of hospital service for each day of patient care increased 79 per cent in the five years between 1946 and 1951—from a national average of \$9.39 to \$16.71. The Commission seeks to determine what part of this increase is due to rise in costs and what part is the result of expansion in services and new techniques in treatment. The progress report emphasizes that to minimize rising hospital costs attention must be given to increased operating efficiency rather than curtailment of services.

The Commission, an independent non-governmental agency, was originally sponsored by the American Hospital Association "to study the costs of providing adequate hospital services and to determine the best systems of payment for such services." Under the chairmanship of Gordon Gray, president of the University of North Carolina, it is composed of 34 American leaders representing a cross-section of public interest. Working from a Chicago office, a full-time professional staff is assembling and analyzing source material for study by the working committees of the Commission, which include all its members and several panels of technical consultants. The final recommendations of the Commission will be made directly to the American public.

The Commission progress report points out that "the American public is demanding, getting, and utilizing more hospital services than ever before." The hospital is becoming increasingly important not only in acute illness and emergency but as a community health agency.

Hospitals have been forced to transfer a larger and larger proportion of their costs to paying patients, since other sources of income such as endowment, charitable donations, and public welfare payments have not



been sufficient to meet higher costs. The only protection against financial catastrophe for the individual patient, and the only substantial new contribution to hospital income, is the voluntary prepayment program.

Over half the population now has some form of prepaid protection against the costs of hospitalization. What proportion of the national hospital bill is now paid by such means? Is extension of coverage by voluntary plans a solution to the problem of financing hospital care for all Americans? How is the use of hospital services related to prepayment? These questions are on the Commission agenda.

Through a series of grass roots conferences held in five regions of the nation, the Commission determined the aspects of hospital financing considered by these groups as most important for investigation. The most urgent problems were found to be (1) determination of the elements of hospital costs and means by which costs may be held to a minimum; (2) the role of physician-hospital relationships as a factor in hospital costs; (3) financing of hospital care for non-wage and low income groups; (4) and the use of voluntary prepayment as a means of meeting the costs of hospital care.

A number of separate reports—some planned as detailed technical studies and others as general reports giving the findings and conclusions of the working committees—are contemplated by the Commission. The general reports have been outlined as follows:

“Financing Hospital Care for Non-Wage and Low Income Groups” will develop, for public discussion, proposals for financing care for those who cannot be expected to participate in prepayment plans on the same basis as the currently employed.

“Prepayment and the Community” will evaluate the role of prepayment plans in financing care in community hospitals, and the means for more effective and efficient use of prepayment in financing the community hospital system.

“Hospitals and the Community” will evaluate the present and potential role of hospitals in providing community health services. It will set forth the Commission's findings on elements of hospital cost and the factors that influence those elements, and it will present the means to achieve coordination in planning and operation of community

hospitals, and to promote understanding by hospitals and communities of their mutual responsibilities.

The final report of the Commission, “Financing Hospital Care for the American People,” will summarize all findings and recommendations.

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#### CENTRAL ALABAMA POSTGRADUATE MEDICAL ASSEMBLY

The Central Alabama Postgraduate Medical Assembly, which is an informal organization of practicing physicians in this area, has scheduled a series of lectures to be held at St. Jude's Hospital in Montgomery at 7:30 P. M. on the 2nd and 4th Tuesdays of each month. The lectures should be of interest to practicing physicians of all specialties. The speakers will be members of the faculty of the Medical College of Alabama, and the lectures are open to all doctors in the state. There is a nominal registration fee of \$3 per lecture or \$20 for the series of 10, in order to defray cost of speakers and other necessary expenses.

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**Rheumatic Fever**—Because of the great variability of attacks of rheumatic fever we did not set a definite course of treatment for all patients but have tried to adjust dosage and duration of therapy to individual needs. Some early cases received suboptimal dosage. We now start with 300 mg. of cortisone or 100 units of corticotropin for the first twenty-four hours in most cases, reducing the amount step-wise to a maintenance dose which is usually 100 mg. of cortisone or 40 units of corticotropin. The speed with which the dosage is reduced varies according to the severity of the attack and the response of the patient. Ordinarily it takes two weeks to reach maintenance levels. The daily dose of either hormone is divided into four parts given at six-hour intervals. We now use cortisone by mouth only. We have used corticotropin only in the fluid form intramuscularly. Roughly equal numbers have been treated with each hormone. At times we begin treatment with corticotropin but change to cortisone for maintenance.

All rheumatic fever patients are given a three-day course of intramuscular penicillin on admission. Recently penicillin has been administered orally, 100,000 units four times daily, as prophylaxis throughout the remainder of the hospital stay. Patients receiving cortisone or corticotropin receive low salt diets and supplemental potassium salts, such as potassium acetate 1.0 gm. three times daily. Decompensated patients are kept in oxygen tents, are given mercurial diuretics and are digitalized.—*Hecht et al., J. Michigan M. Soc., Jan. '53.*

**PROGRAM OF THE ANNUAL SESSION  
OF THE  
MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
BIRMINGHAM**

**APRIL 16, 17, 18, 1953**

**THOMAS JEFFERSON HOTEL**

**GENERAL INFORMATION**

All sessions of the Association will be at the Thomas Jefferson Hotel, convention headquarters.

The maximum time consumed by essayists must not exceed twenty minutes. This time limit, however, does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in the Journal of the Association.

All papers read before the Association must be deposited with the Secretary when read; otherwise, they will not be published.

Papers will be called in the order in which they appear on the program. Should the reader be absent when called, his paper will be passed, and called again when the program is concluded.

**THE FIFTY YEAR CLUB**

According to custom, physicians who graduated fifty years ago will be honored by the Association at this meeting. Their names appear in the program.

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| John W. Simpson          | Birmingham |
| J. Paul Jones            | Camden     |

**State Health Officer**

|            |            |
|------------|------------|
| D. G. Gill | Montgomery |
|------------|------------|

**Delegates and Alternates to the American Medical Association**

|   |            |
|---|------------|
| Delegate—J. Paul Jones                    | Camden     |
| Alternate—D. G. Gill                      | Montgomery |
| (Term: January 1, 1952-December 31, 1953) |            |

|   |            |
|---|------------|
| Delegate—C. A. Grote                      | Huntsville |
| Alternate—E. Bryce Robinson, Jr.          | Fairfield  |
| (Term: January 1, 1953-December 31, 1954) |            |

**PROGRAM****First Day, Thursday, April 16**

Terrace Ballroom

Thomas Jefferson Hotel

**Morning Session**

9:00 A. M.

Call to order by the President—  
B. W. McNease, Fayette.

Invocation—

Guy McGowan, D. D., Pastor, Highlands Methodist Church, Birmingham.

Address of Welcome—

Edgar G. Givhan, Jr., President,  
Jefferson County Medical Society.

**PART I****REPORTS OF STANDING COMMITTEES**

1. Prevention of Blindness and Deafness—  
Alston Callahan, Chairman.
2. Mental Hygiene—  
Jack Jarvis, Chairman.
3. Maternal and Child Health—  
T. M. Boulware, Chairman.
4. Physician-Druggist Relationships—  
W. M. Salter, Chairman.

5. Anesthesiology—  
Alfred Habeeb, Chairman.

6. Postgraduate Study—  
Ralph McBurney, Chairman.

7. Cancer Control—  
John Day Peake, Chairman.

8. Tuberculosis—  
Paul W. Auston, Chairman.

9. Medical Service and Public Relations—  
J. O. Finney, Chairman.

10. Industrial Medicine—  
D. O. Wright, Chairman.

**REPORTS OF SPECIAL COMMITTEES**

1. Nurse Recruitment—  
A. D. Henderson, Chairman.

2. On Membership Extension—  
T. B. Hubbard, Sr., Chairman.

Report of the Secretary-Treasurer—  
Douglas L. Cannon, Montgomery.

Report of the Committee of Publication—  
Douglas L. Cannon, Chairman.

Reports of Vice-Presidents—

(1) Southwestern Division  
A. J. Treherne, Atmore.

(2) Northeastern Division  
J. O. Finney, Gadsden.

(3) Southeastern Division  
S. W. Windham, Dothan.

(4) Northwestern Division  
T. J. Payne, Jr., Jasper.

Message of the President—  
B. W. McNease, Fayette.

**PART II****SCIENTIFIC PROGRAM**

1. Viral Hepatitis—  
JOHN L. THOMPSON, JR.,  
Sylacauga, Alabama.
2. Subarachnoid Hemorrhage—  
STANLEY E. GRAHAM,  
Instructor in Surgery, Department of Neurosurgery; and  
J. GARBER GALBRAITH,  
Associate Professor of Surgery and Head of Division of Neurosurgery,  
Medical College of Alabama,  
Birmingham, Alabama.
3. New Concepts in the Treatment of Uremia—  
KEEHN BERRY,  
Birmingham, Alabama.
4. The Clinical Interpretation of Bone Marrow Smears—  
WILLIAM H. RISER, JR.,  
Professor of Medicine,  
Medical College of Alabama,  
Birmingham, Alabama.

**Afternoon Session**

**Thursday, April 16th**

2:00 P. M.

1. *Pheochromocytoma in a Child—With a Review of the Literature—*  
PAUL M. GOLDFARB,  
Mobile, Alabama.
2. *The Evaluation and General Management of Patients with Hypertension—*  
EUGENE B. FERRIS,  
Professor of Medicine,  
Emory University School of Medicine,  
Atlanta, Georgia.
3. *An Evaluation of the New Hypotensive Drugs in the Treatment of Essential Hypertension—*  
WILLIAM P. GALEN,  
Research Assistant, Department of Medicine;  
LOUIS JOHNSON, B. S.,  
Research Assistant, Department of Medicine;  
and  
HOWARD L. HOLLEY,  
Associate Professor of Medicine,  
Medical College of Alabama,  
Birmingham, Alabama.
4. *Gastroscopy: Its Value and Limitations—*  
ARTHUR M. FREEMAN, JR.,  
Assistant Professor of Medicine,  
Medical College of Alabama,  
Birmingham, Alabama.
5. *Needle Biopsy of the Liver—*  
WILLIAM J. TALLY,  
Gadsden, Alabama.
6. *Maternal Mortality in Alabama: Findings in Survey to Determine Causes—*  
T. M. BOULWARE,  
Birmingham, Alabama.
7. *Some Indications for Sympathetic Block—*  
FRANCIS NICHOLSON,  
Jasper, Alabama.

**Second Day, Friday, April 17th**

**Morning Session**

9:00 A. M.

1. *Oral Mercurial Diuretics: A Clinical Evaluation—*  
WILLIAM E. LAWRENCE,  
Birmingham, Alabama.
2. *The Early Diagnosis of Gastro-Intestinal Cancer—*  
T. BRANNON HUBBARD, JR.,  
Montgomery, Alabama.
3. *Diseases Affecting the Superior Vena Caval System—*  
J. ROSS VEAL,  
Professor of Cardiovascular Surgery,  
Georgetown University School of Medicine,  
Washington, D. C.

4. *The Jerome Cochran Lecture  
Metabolic Aspects of Convalescence—*  
CHAMP LYONS,  
Professor of Surgery,  
Medical College of Alabama,  
Birmingham, Alabama.
5. Recognition of the Fifty-Year Club.
6. Announcement of Vacancies in the College of Counsellors.
7. Meeting of Counsellors and Delegates for the Purpose of Making Nominations to Fill the Vacancies in the College of Counsellors.



**Afternoon Session**

**Friday, April 17th**

2:00 P. M.

1. *The Early Management of Injuries of the Hand—*  
SAMUEL E. UPCHURCH and  
FRANCIS A. MARZONI,  
Birmingham, Alabama.
2. *The Use and Abuse of Estrogen Therapy—*  
ROBERT A. KIMBROUGH, JR.,  
Professor, Obstetrics and Gynecology, and  
Chairman of the Department, Graduate School  
of Medicine, University of Pennsylvania; and  
Director of the Division of Obstetrics and  
Gynecology, Pennsylvania Hospital,  
Philadelphia, Pa.
3. *Gastric Resection for Peptic Ulcer—*  
JOHN W. DONALD,  
Mobile, Alabama.
4. *A Report on Thirteen Years' Experience with the Doctor-Sponsored Blue Shield Movement—*  
ROBERT L. NOVY,  
Professor of Clinical Medicine,  
Wayne University College of Medicine,  
Detroit, Michigan.
5. *The Medical Management of Peptic Ulcer—*  
RICHARD D. CARTER,  
Birmingham, Alabama.
6. *Recent Trends in Surgery of Obliterative Peripheral Arterial Disease—*  
W. STERLING EDWARDS,  
Birmingham, Alabama.



**Last Day, Saturday, April 18th**

9:00 A. M.

Business meeting of the Association sitting as the Board of Health of the State of Alabama:

- (1) Report of the Board of Censors;
- (2) Revision of the Rolls;
- (3) Election and Installation of Officers.



**THE FIFTY YEAR CLUB****Class of 1953**

(To whom Certificates of Distinction will be awarded on Friday morning at the conclusion of the Jerome Cochran Lecture.)

|                            |             |
|----------------------------|-------------|
| Robert F. Ashworth .....   | Eclectic    |
| Frank Blanton .....        | Saragossa   |
| William T. Cocke .....     | Demopolis   |
| Miles A. Copeland .....    | Birmingham  |
| James R. Dawson .....      | Uniontown   |
| George L. Faucett .....    | Gadsden     |
| Fletcher W. Galloway ..... | Floral      |
| Henry W. Gray .....        | Mobile      |
| Ira L. Johnston .....      | Samson      |
| Carney G. Laslie .....     | Montgomery  |
| Earl F. Lee .....          | McKinley    |
| Bartlett J. Massey .....   | Enterprise  |
| R. L. Milligan .....       | Montgomery  |
| Samuel D. Motley .....     | Birmingham  |
| William M. Pierce .....    | Tuscumbia   |
| John R. Pow .....          | Woodward    |
| Thurlow W. Reed .....      | Brewton     |
| John T. Roberson .....     | Riverside   |
| George W. Salley .....     | Atmore      |
| Daniel H. Trice .....      | Boligee     |
| James A. Watson .....      | Springville |
| Marvin S. White .....      | Hamilton    |
| John W. Wilson .....       | Tuscaloosa  |

**VACANCIES IN THE COLLEGE OF  
COUNSELLORS**

Vacancies that will present in the College of Counsellors at this meeting of the Association are as follows and for the reasons set forth:

1st Congressional District—2. J. D. Perdue is to be elevated to Life Counsellor; William T. Cocke's second term of seven years has expired.

2nd Congressional District—4. John A. Martin and L. D. Parker are to be elevated to Life Counsellors; the second term of seven years of N. W. Killingsworth and Hinton W. Waters has expired.

3rd Congressional District—2. Frank H. Boyd's second term of seven years has expired. Millard W. Samford's first term of seven years has expired.

4th Congressional District—1. Marcus Skinner's second term of seven years has expired.

5th Congressional District—2. The second term of seven years of Charles E. Ford and J. O. Morgan has expired.

6th Congressional District—1. Thos. J. Anderson is to be elevated to Life Counsellor.

7th Congressional District—3. Walter A. Gresham is to be elevated to Life Counsellor; the second term of seven years of Lewis C. Davis and R. Lee Hill (Haleyville) has expired.

9th Congressional District—2. John D. Sherrill's second term of seven years has expired; Joseph M. Donald's first term of seven years has expired, as has that of Edgar G. Givhan, Jr.

**PROGRAM  
OF THE  
WOMAN'S AUXILIARY  
TO THE****MEDICAL ASSOCIATION OF THE  
STATE OF ALABAMA**

Tutwiler Hotel

April 16-17

**President**

Mrs. J. O. Morgan ..... Gadsden

**President-Elect**

Mrs. Julian P. Howell ..... Selma

**Vice-Presidents**

Mrs. John M. Chenault ..... Decatur

Mrs. A. J. Brown ..... Mobile

Mrs. T. D. Cowles ..... Troy

Mrs. Jack Brock ..... East Gadsden

**Recording Secretary**

Mrs. Mercer Rowe ..... Gadsden

**Corresponding Secretary**

Mrs. Amos Gipson ..... Gadsden

**Treasurer**

Mrs. William N. Payne ..... Bessemer

**Auditor**

Mrs. J. R. Chandler ..... Bessemer

**Finance Officer**

Mrs. H. L. Rosen ..... Montgomery

**Historian**

Mrs. Mack J. Roberts ..... Mobile

**Parliamentarian**

Mrs. William J. Rosser ..... Birmingham

**Counsellor to Southern Medical**

Mrs. J. R. Horn ..... Bessemer

**COMMITTEE CHAIRMEN****Archives and Exhibits**

Mrs. John Kimmey ..... Elba

**Bulletin**

Mrs. George Newburn ..... Mobile

**Civilian Defense**

Mrs. Louis Friedman ..... Birmingham

**Doctors' Day**

Mrs. Nuckols Davie ..... Anniston

**Jan<sup>e</sup> Todd Crawford Memorial**

Mrs. J. G. Daves ..... Cullman

**Legislation**

Mrs. J. U. Reaves ..... Mobile

**Lettie Daffin Perdue Fund**

Mrs. Edward Sledge ..... Mobile

**Members-at-Large**

Mrs. E. F. Leatherwood ..... Hayneville

**Memorial**

Mrs. W. M. Salter ..... Anniston

**Nominating**

Mrs. Fred Reynolds..... Montgomery

**Organization**

Mrs. Julian Howell..... Selma

**Press and Publicity**

Mrs. Richard E. Tyler..... Birmingham

**Program**

Mrs. John Jenkins..... Birmingham

**Public Relations**

Mrs. J. M. Crawford..... Arab

**Radio**

Mrs. C. D. Killian..... Fort Payne

**Research in Romance of Medicine**

Mrs. Gerald G. Woodruff..... Anniston

**Revisions**

Mrs. E. V. Caldwell..... Huntsville

**Social**

Mrs. Stanley Graham..... Birmingham

**Today's Health**

Mrs. J. C. Chambliss..... Cullman

**Year Book**

Mrs. Fred Reynolds..... Montgomery

**Nurse Recruitment**

Mrs. Paul Simpson..... East Gadsden

**Education**

Mrs. William J. Rosser..... Birmingham

**Wamasa News (News Letter)**

Mrs. William Brannon..... Montgomery



**Thursday, April 16**

9 to 12

Blue Room

Registration

10:30 to 12

Preconvention Executive Board Meeting—Mrs. J. O. Morgan, Presiding.

12 to 2 p. m.

Dutch Luncheon

Place: The Club

Luncheon honoring Mrs. Ralph Eusden, President, Woman's Auxiliary to the American Medical Association, Long Beach, California; and Mrs. R. F. Stover, President, Woman's Auxiliary to the Southern Medical Association, Miami, Florida.

Please make luncheon reservations (\$2.00) by April 9th with Mrs. Charles Lewis, 2624 Heathermoor Rd., Birmingham 9, Ala.

Mrs. J. O. Morgan  
Presiding

Invocation: Mrs. J. C. Carmichael.

**Thursday, April 16**

2:30 to 4:30

**CONVENTION PROGRAM**

Call to Order—Mrs. J. O. Morgan, President, Gadsden.

Invocation—Mrs. Charles Kessler, Birmingham.

Welcome Address—Mrs. W. G. Thuss, Birmingham.

Response—Mrs. Nuckols Davie, Anniston.

Memorial Service—Mrs. W. M. Salter, Anniston.

Message—Mrs. R. F. Stover, Miami, Florida, Southern President.

Address—Dr. B. W. McNease, State President.

Convention Chairman: Rules of Order—Mrs. Charles T. Lewis, Birmingham.

Credentials Chairman—Mrs. L. E. Kirby, Birmingham.

Reading of the Minutes—Mrs. Mercer Rowe, Gadsden.

Annual Reports of Officers.

Presentation of Mrs. Ralph Eusden, President, Woman's Auxiliary to the American Medical Association, Long Beach, California; and Mrs. R. F. Stover, President, Woman's Auxiliary, Southern Medical Association, Miami, Florida.

Annual Reports of Standing Committees.



**Friday, April 17**

Colonial Room

9:30 A. M.

Call to Order—Mrs. J. O. Morgan, Gadsden.

Invocation—Mrs. Louis Friedman, Birmingham.

Civil Defense—Mrs. Louis Friedman, Birmingham.

Revisions—Mrs. E. V. Caldwell, Huntsville.

Annual Reports of County Presidents:

Baldwin—Mrs. R. H. Johnson, Fairhope.

Calhoun—Mrs. James Francis, Anniston.

Coffee—Mrs. John Kimmey, Elba.

Colbert—Mrs. Russell Trapp, Tuscumbia.

Covington—Mrs. L. L. Parker, Andalusia.

Cullman—Mrs. L. H. Clemmons, Cullman.

Dallas—Mrs. J. S. Pilkington, Selma.

DeKalb—Mrs. C. D. Killian, Fort Payne.

Escambia—Mrs. George Perry, Brewton.

Etowah—Mrs. DeWitt Faucett, Gadsden.

Jefferson—Mrs. A. W. Davidson, Bessemer.

Jefferson—Mrs. W. G. Thuss, Birmingham.

Madison—Mrs. John Lary, Huntsville.

Marshall—Mrs. B. N. Lavender, Albertville.

Mobile—Mrs. A. J. Brown, Mobile.

Montgomery—Mrs. R. T. Ashurst, Montgomery.

Pike—Mrs. J. O. Colley, Troy.

Talladega—Mrs. Sumner Davis, Talladega.

Tuscaloosa—Mrs. Robert Cochran, Tuscaloosa.

Address—Dr. Douglas Cannon, Secretary, State Medical Association.

Report of Social Committee—Mrs. Stanley Graham, Birmingham.



Message—Mr. W. A. Dozier, Jr., Director of Public Relations.

Report of Registration Committee—Mrs. C. W. Deaver, Birmingham.

New Business.

Report of Nominating Committee—Mrs. Fred Reynolds, Montgomery.

Election of Officers.

Installation of Officers—Mrs. Ralph Eusden, National President.

Election of Nominating Committee.



### Friday, April 17

12:30 P. M.

Tutwiler Hotel—Terrace Room

Mrs. W. G. Thuss, Presiding

Invocation—Mrs. Robert Guthrie.

Greetings—Mrs. W. G. Thuss.

Response—Mrs. John Chenault.

Introduction of Guests and New Officers.

Introduction of New State Committee Chairmen—Mrs. Julian Howell, President.

History—Mrs. Mack J. Roberts.

Address—Mrs. Ralph Eusden, National President.

Introduction of Committee Chairmen:

Chairman—Mrs. Charles Lewis.

Co-Chairman—Mrs. William S. Armour.

Transportation—Mrs. William Warrick.

Co-Chairman—Mrs. Harrison Wiygul.

Flower Chairman—Mrs. Charles Kessler.

Thursday Luncheon—Mrs. Joe Campbell.

Co-Chairman—Mrs. John Jenkins.

Hostess—

Mrs. Frank Kay.

Mrs. Ralph McBurney.

Mrs. J. J. Durrett.

Mrs. Hurley Knight.

Mrs. Paul Woodall.

Mrs. Ralls M. Coston.

Credentials—Mrs. L. E. Kirby.

Registration—Mrs. C. W. Deaver, Co-Chairman, Mrs. L. E. Kirby.

Social—Mrs. Stanley Graham.

Press and Publicity—Mrs. Richard Tyler, Birmingham.

Convention Chairmen—Mrs. C. F. Lewis and Mrs. W. S. Armour.

Fashion Show



Special Rules of the Auxiliary Convention

1. All persons appearing on program must be seated in reserved section at front of room.

2. Badges must be worn by members of the voting body at all sessions of the convention.

3. When addressing the chair, the speaker shall stand, announce her name and home address.

4. Unless notified to the contrary each speaker shall be limited to (2) two minutes.

5. A timekeeper shall notify each speaker when time is up.

6. All motions must be in writing, signed by the mover and presented to Convention Chairman.

7. No report shall be read except by the person making the report, or a delegate appointed by her.

8. All visitors are welcome at all sessions of convention, but shall sit in section reserved for them.

9. All visitors are requested to register.

10. Order must be maintained at all times.



### OTHER ITEMS

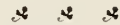
#### VANDERBILT LUNCHEON

The Vanderbilt Medical Alumni Luncheon will be held at 12:45 P. M., Friday, April 17, at the Thomas Jefferson Hotel. All interested should contact Dr. S. E. Upchurch, 2030-11th Avenue S., Birmingham. Tickets for the luncheon will be available at the door.



#### ALABAMA ORTHOPAEDIC SOCIETY

The Alabama Orthopaedic Society's annual meeting will be held at the Thomas Jefferson Hotel from 3:00 to 5:00 P. M. on April 15. Interesting cases will be presented by members of the Society. A cocktail party will follow the meeting.



#### SOCIAL EVENTS

Thursday afternoon, April 16, 5:30 P. M.: Barbecue for Association members, wives and guests. Norwood Clinic, 1529 North 25th Street.

Friday afternoon, April 17, 5:00 P. M.: Cocktail party for doctors only. Simon-Williamson Clinic, 2930 12th Avenue, North.

Friday evening, April 17, 9:00 P. M.-1:00 A. M.: President's Ball, members, wives and guests. Birmingham Country Club.

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**Chest Pain**—In arriving at a diagnosis in the patient with chest pain the system which has been found to be effective consists of a thorough understanding of the various situations which may account for chest pain, a careful, personally elicited history and physical examination, appropriate laboratory examination and determining the effect of medication. This starts, of course, with the most important feature of differential diagnosis which, as all know, is a careful painstaking history. This history must be taken in detail and must be taken in person by the physician responsible for the diagnosis. It cannot be left to the house staff and it is here that the doctor must realize that medical knowledge and experience and clinical judgment are not only the most important tools which can be employed but in many instances are the only means by which a correct differential diagnosis can be made.—*Berry, Missouri Med., Feb. '53.*

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### A FEW FOR THE MANY

W. A. Dozier, Jr.

Director of Public Relations

It takes a certain type of animal to enjoy working with organizations, an animal who does not seek self-aggrandizement despite the fact that his colleagues will often claim that such is his motivation. There is actually only one gratification that this person can find—the satisfaction of seeing progress through his ideas which have been expressed and which have been favorably considered by the group. At a recent meeting, it must have been a gratifying experience to some of the leaders in the Medical Association to hear ideas expressed which they themselves had been working toward for so long.

Balanced against this satisfaction there are disconcerting factors which many times seem completely to outweigh any pleasure one derives from working for his association. Those who have not exerted themselves seldom realize the questions and doubts that arise in the minds of the men who are trying to push a program to fruition. The feeling so often expressed is, "What's the use? You give time and energy to this thing, but who cares? Just try to get anyone to help!" It all boils down to this. In every group it seems that a few are doing the work for the others. This fact is certainly not limited only to medical organizational work. Look at any group you may belong to or about which you may have knowledge. The same will be found true there.

Immediately one wonders why. To answer this would take more space than is available, and very probably a definitive answer could not be reached. If it could, the problem of motivation would be simple; but since people are complex, so of necessity would be an answer. Suffice it to say that the situation is there and partial answers must be sought for each problem that arises.

This animal who works in his organization must believe, first and foremost, that what he is doing, or trying to do, is important, that it is larger than he and must be accomplished for the good of the group. Next, he

must have "tough skin" or at least not carry his feelings on his sleeve. When he hears a friend of his deride something as "just Tom shooting his mouth off," he must not take offense. The job still has to be done. And above all this animal must be indefatigable. If he tries for a short time and then stops, he might just as well have saved his energy. The push is constant, and the problems are legion.

The Medical Association has some of these peculiar animals who are willing to take part in the work of the group. They are convinced that the job to be done is necessary and of importance to all. They are not the type to sulk when slighting remarks are made, and they are always on hand to give unstintingly. There are, however, programs or parts of programs which necessitate the active participation and support of all. One of those is a public relations program. The next year is an important one in this program. Each physician recognizes that. More than recognition is needed. Active participation is necessary.

One physician characterized one effort in the past as "just more hog wash." That attitude did not make the plan nor the effort become that which it was called, but enough members not participating could definitely put the results into that category. Instead of looking askance at your leaders, try giving them the support they need. The results can be gratifying to you.

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**Rural Practice**—The greatest deterrent to the establishment of a modern country practice is the failure on the part of rural communities to provide, or to assist the doctor in providing, adequate diagnostic and therapeutic facilities for the modern practice of medicine. When this failure is coupled with the fact that our country people are poorly educated to the practice of carrying their illness to the doctor and still ask for complete home treatment, the situation becomes one which cannot attract the modern practitioner, regardless of his affinity for rural location. These two deficiencies of facility provision and population education may be considered the fault of the country people themselves; but the medical profession must accept responsibility for the failure to seek and train men specifically for the task of the total practice of medicine in rural areas.—*Bond, Kentucky M. J., Feb. '53.*



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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

### LIVING WITH DIABETES

Contributed by

John M. Gibson, Director

Division of Public Health Education

A spokesman for the Illinois State Department of Health tells us about a certain Mrs. Brown. She may or may not be a real person. She may represent a type rather than an individual. But, in either case, she has much in common with a large number of people, not all of them residents of Illinois either. People like Mrs. Brown are just as likely to be found here in Alabama as in that middle western state. And her experience with a major disease has an important message for all of us.

Here is what that Illinois health official has to say about Mrs. Brown in one of the publications issued by that state's Department of Health:

"Shortly after Mrs. Brown had celebrated her 45th birthday she began to gain weight steadily. Then for no apparent reason she began to get thin and weak. Surprisingly enough, however, her appetite increased. She could not seem to get enough to eat. She was thirsty all the time, too, and drank large quantities of water. . . ."

That excessive water-drinking naturally increased the amount of water which Mrs. Brown took into her system. And, by the same token, it also increased markedly the amount which she eliminated through her kidneys.

Disturbed by these changes, Mrs. Brown went to her doctor. He of course began by talking to her about herself and particularly about those symptoms. Then he gave her a series of examinations. Suspecting diabetes, he asked her to furnish him with specimens of her urine. These, and specimens of her blood, he turned over to a laboratory technician for testing. What they revealed confirmed his suspicions: Mrs. Brown had excessive amounts of sugar in both her blood and urine. On the basis of this test and of what he had found out about her condition

in other ways, he broke the news to her: She had diabetes.

There was a time when such a verdict would have been virtually a death sentence. There was nothing, or practically nothing, that could be done about it. The victim might live a fairly long time. He might feel better occasionally. But he could not hope for a cure. Death was always, or almost always, at the end of the road for him.

Fortunately, that time is past. The diabetes patient no longer faces a dismal outlook. He can expect to live out his normal life span, if he is willing to pay the relatively small price required. He can live about like other people. He need no longer face the bugaboo of unemployability. He should be self-supporting in most cases. He should be able to participate in the social and civic life of his community.

Diabetes is one of the oldest forms of illness known to medical science. The ancient Greeks not only knew it but also gave it its name. The word literally means "a flow of honey." While a word meaning "a flow of sugar" would have been more exact, the one used gives a pretty good indication of the nature of the disease and its chief peculiarity (the presence of sugar in the blood and urine).

Specifically, what is diabetes? What happens when one gets it?

The food we eat normally contains a great deal of sugar. And the normally healthy human body is fully capable of handling as much as the body may receive. If the intake is temporarily in excess of the body's current needs, a healthy body is capable of storing the excess away for use later when the supply is less. Certain tissues serve as sugar storehouses, so to speak.

But some people undergo certain bodily changes which prevent them from using sugar in their systems or storing it in that way. Then the unused sugar goes into the blood and urine. That which is absorbed into the blood produces the abnormal thirst which is one of the most significant symptoms of diabetes. That which goes into the urine is discharged through the kidneys.

Meanwhile, the body is robbed of the energy and other benefits which sugar normally provides. This brings on constant hunger, along with a loss of weight and strength.

What is that specific change in the body which turns a non-diabetic into a diabetic?

Special cells in that part of the body known as the pancreas produce a vital secretion known as insulin. That secretion is what enables the body to burn and store sugar. When, for any reason, the production of insulin is seriously reduced or stopped, that normal use of the body's sugar becomes impossible. It is then that it goes into the blood and urine. It is then that diabetes begins.

You will recall that our Mrs. Brown had recently passed her 45th birthday. That age is significant, although diabetes is not exclusively or even primarily a disease problem of those of 45. For this is essentially a disease of middle age and old age, although youngsters are not altogether strangers to it. (You may remember the camps for diabetic children which are maintained by charitable organizations, newspapers and similar groups.) Broadly speaking, if there is such a thing as "the diabetes age group," it consists of those between 40 and 60. For some reason, women are more susceptible than men. Statistical studies have also shown that it is more prevalent among members of the Jewish race than among Gentiles. And whether a person is of about normal weight or markedly overweight is an important contributing factor. That is one reason why your doctor warns you to watch your weight—to keep an eye on your waistline—after you reach middle age.

If your father or mother has had diabetes, the chances are greater that you will also have it. For it has been found to "run in families." Naturally, if you have it on both sides of your family, this likelihood is correspondingly greater.

Diabetes presents a particular problem to expectant mothers. It complicates their responsibility for keeping themselves in top physical condition for the extra strain which they must endure during those vital nine months. However, the problem is not serious enough to justify great concern. Like other health problems, it should be placed on the capable shoulders of one's physician. Those in charge of prenatal clinics naturally devote particular attention to this mat-

ter. To find out which expectant mothers have, and which do not have, diabetes, laboratory tests of the blood and urine are routine.

Certain early-stage cases of diabetes can be controlled by means of the diet. Exactly what this should consist of varies from patient to patient. In general, however, the diabetic eats about what his more fortunate friends eat. The difference lies in the amount eaten. There is general medical agreement with a health authority who has suggested as a basic daily diet a dish of cereal, three slices of bread, three oranges, half a pint of mixed milk and cream, one egg, meat, fish or cheese and green vegetables. There may be a small amount of butter or fortified oleomargarine.

Many diabetes cases, however, do not benefit from diet alone. For them, two Canadian physicians have provided a product which has robbed diabetes, even in its extreme forms, of most of its terror. That product, born in the brains and laboratory of Dr. Frederick Grant Banting and Dr. Charles H. Best, has also received the name insulin.

Insulin, however, is not a complete answer to diabetes. In a strict sense, it is not even a cure at all. You cannot take a series of insulin treatments and then forget you have ever had diabetes. It is a man-made substitute for the natural product that most people take for granted until it fails them. Its use does not cause that interrupted flow to resume. The diabetes victim continues free of symptoms only as long as he uses it. Immediately after its use is discontinued, under the misguided impression that he is well, those symptoms return. Blood and urine tests again show the presence of sugar. The victim is back where he started.

That, obviously, limits insulin's field of usefulness. It must be kept up permanently. This is unfortunate of course. It would be a wonderful thing to be able to discontinue its use after a relatively short period. But, after all, having to use it permanently is a relatively small price to pay for the good it does.

Its administration is simple. After a little instruction, the patient can easily give it to himself. Or some member of his family can give it to him. He may even learn how to test his own urine regularly to be sure he is still getting the proper benefits from it.



Naturally, however, he should be under the supervision of a physician. That is especially true when he becomes sick with some other form of illness.

How many people have diabetes?

Nobody knows exactly, or even approximately. However, it is estimated that there are some two million cases in the United States at the present time. (About half of these are unknown or undiagnosed cases.) Youngsters of school age are said to constitute from three to five per cent of these cases. Thus from 60,000 to 100,000 American school children are believed to have this disease.

There is no way of telling how many of those diabetic children and adults are Alabamians. However, a survey made some time ago by the State Department of Health, in cooperation with county health departments, showed that there were 4,629 cases among the 219,228 Alabamians tested. Assuming that those tested were typical of the entire state, as far as this disease is concerned, about one Alabamian out of every 50 has this disease (2.1 per cent).

One danger of which the diabetic needs to be constantly aware is infection. The average person without this disease does not pay much attention to slight injuries. He is not likely to go to much trouble to prevent a cut in the flesh from becoming infected. And, for a person in normal health, it is usually safe to take such an attitude. But it is a dangerous one for the diabetic to take. Even the slightest infection demands immediate medical care. As someone has said, "the cleanest individual in the community should be the diabetic." A slight cut or bruise may cause gangrene.

This danger is probably more serious where children are concerned. For adults can be impressed with the need to be constantly on the watchout for injuries. But a child is forgetful. He does not realize the seriousness of the danger the neglected cut or bruise invites.

The diabetic needs to give special attention to his feet. He should not try to become an amateur chiropodist. While a diabetic who has received special training in foot care perhaps may safely treat himself for corns and calluses, anybody lacking that

special training should not do so. And a diabetic visiting a chiropodist for the first time should tell him that he has diabetes. Then the chiropodist can adjust his treatment to the needs of the patient.

The diabetic should wash his feet daily. He should remove his shoes from time to time and rest not only his feet but his whole body. Something soft—lamb's wool has been suggested—should be worn in those parts of the shoe where there is maximum pressure against the feet. The diabetic needs to buy his shoes with particular care, being sure he gets a snug fit. He should avoid those that are stiff. Hot pads or other forms of artificial heat should not be applied to the feet.

The person who finds he has diabetes needs to realize that he has to make necessary adjustments to the disease. And he must remember that they are permanent adjustments. But he need not regard himself as an invalid. Let him use reasonable care and plenty of good sense. If he will do that, he will find that he and diabetes can get along pretty well together.

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**Auricular Fibrillation**—Two types of auricular fibrillation should be recognized. The first is that associated with organic heart disease. Chronic rheumatic mitral valvular disease has long been known as the precursor of auricular fibrillation. Coronary arteriosclerotic heart disease with myocardial fibrosis—with or without hypertension—is another. The so-called thyrotoxic heart disease is frequently accompanied by auricular fibrillation, although it should be recognized that specific underlying cardiac lesions are present before the onset of thyrotoxicosis. Auricular fibrillation often occurs in hypertensive heart disease. It is unusual for this arrhythmia to occur in isolated aortic insufficiency due to syphilis of the aortic valve, but it does occasionally develop in patients with isolated rheumatic aortic involvement. This group encompasses those patients with the greatest incidence of auricular fibrillation, and it is noted that all save a small percentage in the thyrotoxic group have organic heart disease.

The second type of patient who has auricular fibrillation is rather unusual but not unimportant. This is the rare individual who, without any demonstrable cardiac lesion, presents auricular fibrillation. The bulk of these patients give a history of paroxysms of tachycardia. Careful questioning reveals that the patient noted the heart-beat to be irregular. Often the fibrillation may be observed and recorded by the electrocardiograph. That this dysrhythmia should be considered lightly is untrue, since we have observed peripheral emboli and, with a long paroxysm the development of cardiac enlargement and failure in paroxysmal auricular fibrillation on several occasions.—*McMillan, J. M. A. Georgia, Feb. '53.*

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

December 1952

SPECIMENS EXAMINED

|   |        |
|---|--------|
| Brucella cultures .....   | 32     |
| Examinations for diphtheria bacilli and Vincent's .....         | 445    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 751    |
| Typhoid cultures (blood, feces and urine) .....                 | 353    |
| Examinations for malaria .....                                  | 94     |
| Examinations for intestinal parasites .....                     | 2,296  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 22,419 |
| Darkfield examinations .....                                    | 3      |
| Examinations for gonococci .....                                | 1,441  |
| Examinations for tubercle bacilli .....                         | 2,885  |
| Examinations for meningococci .....                             | 0      |
| Examinations for Negri bodies (microscopic) .....               | 119    |
| Water examinations .....  | 1,457  |
| Milk and dairy products examinations .....                      | 4,376  |
| Miscellaneous .....   | 1,238  |
| Total   | 37,909 |

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1952

|                                    | Nov. | Dec. | E. E.*<br>Dec. |
|------------------------------------|------|------|----------------|
| Typhoid and paratyphoid fever..... | 1    | 2    | 3              |
| Undulant fever .....               | 2    | 6    | 3              |
| Meningitis .....                   | 13   | 14   | 7              |
| Scarlet fever .....                | 77   | 71   | 71             |
| Whooping cough .....               | 51   | 31   | 91             |
| Diphtheria .....                   | 59   | 25   | 45             |
| Tetanus .....                      | 5    | 5    | 3              |
| Tuberculosis .....                 | 185  | 136  | 198            |
| Tularemia .....                    | 0    | 1    | 1              |
| Amebic dysentery .....             | 4    | 3    | 0              |
| Malaria .....                      | 1    | 3    | 17             |
| Influenza .....                    | 281  | 252  | 302            |
| Smallpox .....                     | 0    | 0    | 0              |
| Measles .....                      | 106  | 146  | 44             |
| Poliomyelitis .....                | 23   | 10   | 8              |
| Encephalitis .....                 | 0    | 0    | 0              |
| Chickenpox .....                   | 310  | 323  | 153            |
| Typhus fever .....                 | 1    | 0    | 10             |
| Mumps .....                        | 57   | 71   | 64             |
| Cancer .....                       | 523  | 402  | 224            |
| Pellagra .....                     | 1    | 1    | 3              |
| Pneumonia .....                    | 178  | 155  | 222            |
| Syphilis .....                     | 233  | 125  | 945            |
| Chancroid .....                    | 10   | 5    | 17             |
| Gonorrhea .....                    | 340  | 241  | 463            |
| Rabies—Human cases .....           | 0    | 0    | 0              |
| Positive animal heads .....        | 55   | 50   | 0              |

As reported by physicians and including deaths not reported as cases.  
\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR OCTOBER 1952, AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                             | Number<br>Registered<br>During<br>October 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|---|--|-------|---------|--------------------------|-------|-------|
|   | Total  | White | Colored | 1952                     | 1951  | 1950  |
| Total live births .....   | 7178   | 4657  | 2521    | 27.0                     | 27.9  | 27.8  |
| Total stillbirths .....   | 198  |       |         | 26.8                     | 27.5  | 28.4  |
| Deaths, stillbirths excluded .....  | 2153   | 1232  | 921     | 8.1                      | 7.9   | 8.1   |
| Infant deaths:  |  |       |         |                          |       |       |
| under one year .....  | 261  | 142   | 119     | 36.4                     | 33.1  | 32.0  |
| under one month .....   | 183  | 111   | 72      | 25.5                     | 21.9  | 22.2  |
| Causes of Death   |  |       |         |                          |       |       |
| Tuberculosis, 001-019 .....   | 40   | 20    | 20      | 15.0                     | 24.7  | 26.1  |
| Syphilis, 020-029 .....   | 10   | 3     | 7       | 3.8                      | 4.2   | 6.1   |
| Typhoid and paratyphoid, 040, 041 .....                                       | 1  | 1     |         | 0.4                      |       |       |
| Dysentery, 045-048 .....  | 1  | 1     |         | 0.4                      |       | 0.4   |
| Diphtheria, 055 .....   | 4  | 2     | 2       | 1.5                      | 1.1   | 0.8   |
| Whooping cough, 056 .....   |  |       |         |                          | 1.9   | 1.5   |
| Meningococcal infections, 057 .....   | 3  | 3     |         | 1.1                      | 0.4   | 0.4   |
| Poliomyelitis, 080, 081 .....   | 2  | 2     |         | 0.8                      | 0.8   |       |
| Encephalitis, 082, 083 .....  |  |       |         |                          | 0.4   |       |
| Measles, 085 .....  |  |       |         |                          | 0.8   |       |
| Malignant neoplasms, 140-205 .....  | 254  | 168   | 86      | 95.6                     | 73.6  | 85.6  |
| Diabetes mellitus, 260 .....  | 28   | 16    | 12      | 10.5                     | 8.3   | 8.8   |
| Pellagra, 281 .....   | 1  | 1     |         | 0.4                      | 0.8   | 1.9   |
| Vascular lesions of central nervous system, 330-334 .....                     | 258  | 123   | 135     | 97.1                     | 97.5  | 104.0 |
| Other diseases of nervous system, 300-318, 340-398 .....                      | 24   | 11    | 13      | 9.0                      | 10.2  | 10.7  |
| Rheumatic fever, 400-402 .....  | 3  | 2     | 1       | 1.1                      | 0.8   | 2.3   |
| Diseases of the heart, 410-443 .....  | 639  | 407   | 232     | 240.5                    | 240.9 | 225.2 |
| Diseases of the arteries, 450-456 .....                                       | 28   | 20    | 8       | 10.5                     | 8.3   | 12.3  |
| Other diseases of the circulatory system, 440-447, 460-468 .....              | 39   | 18    | 21      | 14.7                     | 13.3  | 9.6   |
| Influenza, 480-483 .....  | 6  | 4     | 2       | 2.3                      | 3.4   | 2.7   |
| Pneumonia, 490-493 .....  | 68   | 28    | 40      | 25.6                     | 23.5  | 24.6  |
| Bronchitis, 500-502 .....   | 7  | 4     | 3       | 2.6                      | 1.1   | 0.8   |
| Appendicitis, 550-553 .....   | 7  | 2     | 5       | 2.6                      | 1.5   | 2.3   |
| Intestinal obstruction and hernia, 560, 570, 561 .....                        | 15   | 8     | 7       | 5.6                      | 6.1   | 8.8   |
| Gastro-enteritis and colitis (under 2), 571.0, 764 .....                      | 49   | 27    | 22      | 18.4                     | 6.8   | 6.9   |
| Cirrhosis of liver, 581 .....   | 2  |       | 2       | 0.8                      | 3.8   | 5.4   |
| Diseases of pregnancy and childbirth, 640-689 .....                           | 12   | 5     | 7       | 16.3                     | 19.8  | 14.8  |
| Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684 ..... | 2  | 1     | 1       | 2.7                      | 5.4   | 2.7   |
| Congenital malformations, 750-759 .....                                       | 33   | 23    | 10      | 4.6                      | 4.2   | 4.0   |
| Accidental deaths, total, 800-962 .....                                       | 139  | 78    | 61      | 52.3                     | 50.5  | 63.7  |
| Motor vehicle accidents, 810-835, 960 .....                                   | 77   | 46    | 31      | 29.0                     | 29.6  | 35.3  |
| All other defined causes .....  | 367  | 209   | 158     | 138.1                    | 148.7 | 137.7 |
| Ill-defined and unknown causes, 780-793, 795 .....                            | 113  | 46    | 67      | 42.5                     | 36.4  | 46.8  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based on the October report of the years specified.



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BOOK ABSTRACTS AND REVIEWS

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**Clinical Instruction and Its Integration in the Curriculum.** By Deborah MacLurg Jensen, R. N., B. S., M. A., Instructor in Nursing Education and Sociology, University of Missouri; Formerly Assistant Director, School of Nursing, St. Louis City Hospital; Supervisor of Clinical Instruction in Nursing, University of Minnesota; Assistant Director, School of Nursing, Washington University, St. Louis. Third edition. Cloth. Price, \$5.75. Pp. 534. The C. V. Mosby Company, St. Louis, 1952.

Perhaps there is no better way to explain the "raison d'être" for the third edition of this publication than to quote from the author's preface: "The first edition of this book, published in 1942, was called 'The Principles and Practice of Ward Teaching.' The second edition, published in 1946, was called 'The Principles and Practice of Clinical Instruction.' The change in title pointed out the changing emphasis in clinical teaching taking place in nursing education. Since 1946 the trend to place clinical teaching as an integral part of all instruction in nursing has continued. To emphasize this point the title is now 'Clinical Instruction and Its Integration in the Curriculum.'" Thus the author attempts to lessen the gap between theory and practice in the education of the nurse.

Unit I gives sufficient background relative to the development of clinical instruction. In Unit II the planning and integration of nursing courses is studied in relation to an evolving curriculum. This section should be of considerable help to instructors in schools of nursing as a pattern from which to plan the program with which they are concerned. It is unfortunate that the term *course* is used where total program is intended, since this is confusing to students.

There are some valuable study questions following each of some units. Unfortunately this practice is not uniformly carried out.

The next unit is concerned with principles of learning and methods of teaching. This section reveals that Mrs. Jensen has taught many graduate nurses and that she is able to present practical methods of teaching which involve the use of the principles that she has suggested. Of course, to make this text usable in size, this section has to treat these topics in a less complete manner than may be desired by some. The study of psychology and some courses in education would undoubtedly be needed to supplement the unit for the preparation of nurse instructors.

Along with teaching must go measurement and guidance. Mrs. Jensen has therefore included considerable information on various types of evaluation procedures and how these may be used.

It would seem that Unit V, "Faculty Organization and Preparation," is placed rather late in the organization of this book. Examples of integrat-

ed programs of clinical instruction in the medical-surgical, pediatric, obstetric, and psychiatric services are presented at this point; and Mrs. Jensen's aim is to attempt to give instructors in schools of nursing a pattern for integration and correlation of courses. It is doubtful if the uniqueness of a program in an individual school would fall into a rather stereotyped plan as given in this text.

There are two appendices, one which gives samples of various forms for student records, and one which lists sources for teaching aids. These appendices may prove helpful to some. However, each school of nursing should devise the records it needs. The appendix on sources for teaching aids also has limitations, because every real teacher is at all times familiar with sources for teaching aids. Since this information must be kept up to date, current material is more useful than that listed in a textbook.

The few illustrations at the beginning of some of the units are line drawings and do not appear to add to the value of the content. The drawing facing page 243 is an exception, for it gives more concrete information than many descriptive words might do. I believe, however, that a simple diagram would be as effective. The price of the book is relatively high for its size and the value of the material.

Lyndon McCarroll, R. N.

**Practical Dermatology.** By George M. Lewis, M. D., F. A. C. P., Professor of Clinical Medicine (Dermatology), Cornell University Medical College; Attending Dermatologist, The New York Hospital; Secretary, American Board of Dermatology and Syphilology. Cloth. Price, \$7.50. Pp. 345, with 405 illustrations on 99 figures. Philadelphia: W. B. Saunders Co., 1952.

This book is well illustrated and easily understood. The discussion of the fundamental diagnostic methods so essential for an accurate diagnosis of cutaneous disease is complete. It is presented in a straightforward manner so that the significant facts are readily found. The 99 plates contain from two to six illustrations each. These are especially important in dermatology where so much of the diagnosis and treatment depends upon visible findings. In general the individual diseases are discussed from the standpoint of symptoms, etiology, differential diagnosis, and treatment. The therapy of each disease is outlined. One chapter is devoted to the discussion of general principles of dermatologic treatment. The author indicates a clear concept of ACTH and cortisone therapy. A practical formulary is followed by a formulary index for quick reference to specific medications.

In this book which is designed primarily for use by the non-dermatologist, a highly specialized discussion of histopathology, mycology, al-

lergy, radiology, and the basic sciences is not required and avoids cumbersome reading for the student and general practitioner. An excellent bibliography is appended for those who desire detailed information in related fields.

Medical students will find this book a valuable aid in learning dermatology and it will be equally valuable to the practitioner who is responsible for the care of patients with cutaneous disease.

Hugh B. Praytor, M. D.

**Surgery and the Endocrine System:** Physiologic Response to Surgical Trauma—Operative Management of Endocrine Dysfunction. By James D. Hardy, M. D., F. A. C. S., Assistant Professor of Surgery, University of Tennessee College of Medicine. Cloth. Pp. 153, with 43 illustrations. Philadelphia and London: W. B. Saunders Co., 1952.

Dr. Hardy is an Alabama man, who went to the University of Alabama, and took his medical and postgraduate training at the University of Pennsylvania. He is now Assistant Professor of Surgery at the University of Tennessee College of Medicine. In this book he has brought together in one volume a synopsis of recent research on the relation of the endocrine system to trauma, particularly surgical trauma.

The book is essentially in two general divisions: the first portion deals with the general response of the body to trauma. There are chapters on the alarm signal in the surgical patient; metabolic aspect of body fluid regulation and of shock; the relation of nutrition to trauma; the physiology of early ambulation and convalescence; the endocrinology associated with burns, infection, tissue repair and tumors; and the endocrine therapy of surgical patients.

The second portion of the book has chapters which cover surgical diseases of the individual endocrine glands. Each subject is reviewed in detail.

The book is an attempt to show the response of the entire patient to trauma. Thereby, treatment can be directed at the entire patient, rather than only at a single specific lesion.

The book will be of value to all surgeons who wish to know more about the inner relation of various endocrine glands—their reaction to trauma and how to predict and to manage these reactions.

John M. Cameron, M. D.

**Ward Administration.** By Deborah MacLurg Jensen, R. N., B. S., M. A. Instructor in Nursing and Sociology, University of Missouri; formerly Assistant Director, School of Nursing, St. Louis City Hospital; Supervisor of Clinical Instruction in Nursing, University of Minnesota; Assistant Director, School of Nursing, Washington University, St. Louis. Cloth. Price \$4.00. Pp. 330, with illustrations. The C. V. Mosby Company, St. Louis, 1952.

This is a first edition of a book written to help the head nurse in the administration of her unit in the hospital. The same author has written a

book dealing with clinical instruction so that by these two books, used in combination, the nurse has adequate reference for her twofold function as administrator and teacher.

Mrs. Jensen has been active in the field of nursing education for many years and is now engaged in teaching graduate nurses so that they may become better teachers and thus provide the patient with better nursing care. The text is inclusive in that the hospital in the community is considered first, followed by a discussion of the place of the head nurse in the modern hospital.

Patients' needs are many. The author has considered the patient before entry, on admission, during his hospital stay, and on return to his home and family. All aspects are noted, including assignments, time scheduling, records, and written administrative routines. The hospital environment and its equipment and supplies are included.

Since the head nurse must be a personnel manager, the principles of successful administration are explained. The head nurse as a leader must function in the education program for the entire staff. This involves the use of evaluation techniques with which the head nurse must be familiar so that she may counsel and guide the workers in her unit.

The next unit of this book carries the head nurse to the next administrative step, that of supervisor. As the use of various teaching methods is required of the supervisor, these are clearly explained. The last unit includes the qualifications and preparation needed for the position of the head nurse which is a vital one in the hospital. There is an appendix giving instruction for the preparation of a ward manual. There is a table of contents and a good index. The few illustrations are line drawings which do not contribute materially or educationally to the content. The annotated bibliographies at the end of units are helpful but are not as up to date as they should be. The book is intended as a beginning text in the area of administration and probably will function as its author ambitions.

Lyndon McCarroll, R. N.

**Textbook of Pharmacology.** By William T. Salter, M. D., Professor of Pharmacology, Yale University School of Medicine. Cloth. Price, \$15.00. Pp. 1240, with illustrations. Philadelphia: W. B. Saunders Co., 1952.

The author is a clinician as well as a pharmacologist. Many years of clinical and laboratory experience has enabled him to combine in this textbook the basic pharmacologic approach with clinical applications.

The general scope of the book is divided into four parts. The first part deals with general principles, such as prescription writing and administration of drugs. The heritage of pharmacology is also discussed. In the second part the action of drugs on physiologic mechanisms is covered. The third part is devoted to pharmacologic applications in clinical medicine. Part four is concerned primarily with toxicology.

The fundamental pharmacology contained in



this book makes it a valuable aid to students. The clinical pharmacologic sections will be of considerable reference value to practicing physicians and medical students.

Hugh B. Praytor, M. D.

**Ophthalmic Pathology.** By Jonas S. Friedenwald, Helenor Campbell Wilder, A. Edward Mau-menee, T. E. Sanders, John E. L. Keyes, Michael J. Hogan, W. C. and Ella U. Owens, with editorial assistance of Helen Knight Steward. Cloth. Price, \$18.00. Pp. 500, with 963 illustrations on 240 figures. Philadelphia: W. B. Saunders Company, 1952.

This publication stems from the Atlas of Ophthalmic Pathology by DeCoursey and Ash, which was based on material in the Registry of Ophthalmic Pathology produced by the Army Medical Museum and sponsored by the American Academy of Ophthalmology and Otolaryngology.

Since the first edition of the Atlas of Ophthalmic Pathology in 1938, there have been two subsequent revisions and publications in 1939 and 1942 respectively.

This present edition, however, is much more than an atlas per se, but rather is designed to be used as a textbook and atlas of ophthalmic pathology. It is co-sponsored by the American Academy of Ophthalmology and Otolaryngology and the Armed Forces Institute of Pathology.

The preceding editions of the Atlas were primarily designed to further the instruction of residents desirous of meeting board certification in histopathology and to furnish a convenient source for the ophthalmologist in studying the pathology of his specialty. The scope of the new textbook and atlas of ophthalmic pathology is much more inclusive and is of considerable value to the less advanced student since it includes sections on the normal anatomy, physiology, and histology of the eye. It also forms a bridge leading from general pathology to specialized ophthalmic pathology. With this purpose in view, there is a section on the nature and mechanism of inflammation as the general laws of pathology are just as applicable to the eye as any other organ.

The book is divided into these eighteen sections: I. Introduction: Anatomic and Physiologic Considerations; II. Histology; III. Growth and Aging; IV. Nature and Mechanism of Inflammation; V. Endophthalmitis and Phthisis Bulbi; VI. Focal Lesions in Endogenous Endophthalmitis; VII. Granulomatous Inflammations; VIII. Injuries; IX. Extrabulbar Diseases; X. Diseases of Conjunctiva and Cornea; XI. Diseases of the Lens; XII. Intraocular Fluid Circulation, Glaucoma and Hypotony; XIII. Diseases of the Ocular Blood Vessels; XIV. Retina, Optic Disc and Optic Nerve; XV. Congenital and Developmental Anomalies; XVI. Prenatal and Neonatal Diseases; XVII. Heredofamilial and Degenerative Diseases; XVIII. Tumors; and an extensive index.

These sections, except those pertaining to normal aspects, deal with the pathogenesis and morphologic pathology of the lesions covered in the respective sections. Each section, excluding the first, is followed by excellent photomicro-

graphs illustrating subjects corresponding to the section headings rather than specific cases.

This volume is intended as a teaching aid rather than a reference and towards that end it has been written to give a clear and comprehensive coverage of the most widely accepted concepts of pathology taught in leading medical colleges.

Bruce Holding, M. D.

**Synopsis of Pathology.** By W. A. D. Anderson, M. A., M. D., F. A. C. P., Professor of Pathology, Marquette University School of Medicine; Pathologist, St. Joseph's Hospital, Milwaukee, Wisconsin. Third edition. Cloth. Price, \$8.00. Pp. 788, with 334 illustrations and 13 color plates. St. Louis: The C. V. Mosby Company, 1952.

Dr. Anderson has again revised his Synopsis of Pathology. It is the most complete manual at present available for sophomore medical students and is so readable and up-to-date that it should be on every physician's library shelf for handy reference. It is accurate in all respects, and well illustrated, with excellent photographs.

I understand that Dr. Anderson is returning to the South as a Professor of Pathology in Miami. His presence as well as his excellent books will strengthen pathology in this area.

A. E. Casey, M. D.

**Total Hysterectomy**—Although there is rather general agreement among authoritative gynecologists that when the uterus must be removed total excision is the treatment of choice, there is still considerable confusion in the minds of many regarding the best approach to the uterus. Since the indications for the abdominal and vaginal approaches are quite definite, there is actually no reason for difficulty in deciding which approach to employ in a specific case. A thorough history and physical examination should indicate the correct decision. This should depend upon the evaluation of the pathologic alterations found, whether or not the patient has had previous pelvic operations, and the presence or absence of obesity. Never should the decision be based upon the proficiency of the operator or his own personal whims. Every surgeon who does hysterectomies should be equally adept at removing the uterus abdominally as vaginally, so that his decision is not influenced by lack of skill for one or the other approach.

The primary indications for vaginal hysterectomy are uterine prolapse, particularly second and third degree ones, which are almost always associated with cystocelēs and rectoceles, and extremely obese patients with a freely movable uterus and some degree of prolapse. It has been my experience that the best method of treatment for complete procidentia is vaginal extirpation of the uterus with repair of the cystocele and perineorrhaphy.—Tyrone, J. Louisiana State M. Soc., Jan. '53.

# THE JOURNAL

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## THE MANAGEMENT OF EMPHYSEMA

LOUIS L. FRIEDMAN, M. D.

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The treatment of emphysema is entirely symptomatic. Relief of dyspnea, and especially severe paroxysms of dyspnea, is the major problem in the treatment of emphysema. The most one may expect from presently available and popular therapeutic measures is temporary relief of the clinical symptoms. No lasting benefits should be anticipated. Successful treatment of primary diseases capable of producing emphysema is the best safeguard against its development.

Many cases of emphysema develop in asthmatic individuals. In these instances, effective and energetic management of the asthma may prevent the development of severe emphysema or allay its effects if present. The use of appropriate vaccines to desensitize asthmatic patients may diminish or actually eliminate allergic reactions. More recently, in cases of emphysema associated with an allergic component, limited success has been reported with innumerable antihistamines. To obtain the maximum therapeutic benefits from the use of these preparations, when effective, administration should be by the aerosol route. Especially in longstanding cases, systemic therapy is prone to result in failure. Aerosol antihistaminic therapy is capable of achieving satisfactory results both in cases with an allergic component and frequently in those due to other causes. Seven and one-half grains (0.5 gm.) of aminophylline administered intravenously in a 20 cc. solution is likewise effective in relieving dyspnea associated with emphysema. The use of aminophylline by mouth is not as successful chiefly because the large dosage required by this route of administration is nauseating and not well tolerated by most patients. Results achieved with rectal suppositories of aminophylline 7½ grains (0.5 gm.) are likewise discourag-

ing. Some proprietary preparations contain a barbiturate in one form or another. The relief obtained with these combinations is probably due to the effect of the sedative. Properly prepared solutions of aminophylline are likewise effective by the aerosol route. Severe paroxysms or constant dyspnea may require the administration of oxygen. Some feel that a mixture of helium and oxygen is more effective. The difference in therapeutic effectiveness between helium and oxygen mixtures and pure oxygen has proved more theoretical than real. Oxygen is still the gas of choice in spite of certain definite limitations to its usefulness. For one thing too frequent and injudicious use may cause habituation and a sense of dependency manifested by undue, but nevertheless, serious apprehension in its absence. Physicians should guard against these developments by intelligent utilization of this therapeutic agent. A patient completely reliant on oxygen is a very distressing sight. Although a pitiable terminal residence in an oxygen tent is part of the picture of emphysema, all efforts should be exerted to delay this inevitable outcome. Uncommonly a patient may become more dyspneic in an oxygen tent. When this unfortunate complication supervenes, the patient should be removed from the tent immediately. The inhalation of small amounts of an oxygen and carbon dioxide mixture should be administered. Oxygen therapy may be resumed at a low and gradually increasing concentration. Delirium is likewise an uncommon complication of oxygen therapy. Carbon dioxide inhalations and nicotinic acid intravenously are helpful in this instance.

Since relief of bronchiolar spasm and edema is imperative, the use of a sympathomimetic drug, such as ephedrine sulfate



$\frac{3}{4}$  to  $\frac{3}{8}$  grains several times daily, is indicated. In the absence of acknowledged contraindications, this drug may be administered to advantage. Likewise, 1 cc. of adrenalin in oil (1:500) given intramuscularly from one to three times daily may relieve distressing dyspnea and prevent severe paroxysms. During severe episodes of dyspnea, the use of faster acting preparations is indicated. One-half to one cubic centimeter of epinephrine hydrochloride (1:1000) hypodermically may be effective. Very dramatic relief results from a few inhalations of a sympathomimetic aerosol. Adrenalin 1:100, Vaponefrin, Isuprel and Norisodrine are only a few of the preparations available for this method of administration. Regular and routine use of an aerosol sympathomimetic agent is frequently necessary. One cc. of any of the above mentioned preparations may be used four times daily. The recommended dose may appear excessive, but one must realize that only about one-half of the aerosol reaches the bronchial tree. The remainder is lost in the process of aerosolization. Smaller doses administered more frequently and as necessary are more effective in maintaining a satisfactory therapeutic level. The degree of symptomatic relief produced by aerosol sympathomimetic agents is usually gratifying to both patient and physician. Furthermore, the subjective improvement may be verified with appropriate and simple pulmonary function studies. Unfortunately, the administration of these drugs in sufficient dosage to achieve the desired therapeutic benefits may produce annoying side-reactions. Insomnia and tachycardia are only a few of the more undesirable side effects. The routine use of a sedative drug should be the rule when large doses of sympathomimetic drugs are used. In this manner the clinical manifestations of the undesirable side-reactions may be subdued. Pharmaceutical companies have tried in vain to eliminate these annoying complications. Sympathomimetic drugs should not be used continuously for more than brief periods of time. Prolonged use of these agents eventually renders the patient resistant to their beneficial pharmacologic actions. The prolonged use of aminophylline is attendant with the same limitations. Best results will be achieved by varying the drugs used and the route of administration.

In acute episodes of dyspnea the use of a barbiturate, a bromide or any other satis-

factory sedative in adequate amounts to relieve the omnipresent apprehension of the patient is imperative. This is a very important admonition since this undesirable psychogenic reaction confuses the picture and aggravates all of the clinical symptoms, especially dyspnea. The use of morphine and other opiates is contraindicated in patients whose emphysema complicates asthma. Narcotics should be avoided in all cases of emphysema.

Variable results may be obtained with the use of abdominal belts devised and recommended by many investigators. They are prescribed on the assumption that dyspnea may be relieved by increasing the intra-abdominal pressure. Many patients cannot tolerate these belts and readily forego the possible symptomatic benefits. Abdominal belts should be recommended, however, only after fluoroscopic examination has ascertained the degree of diaphragmatic mobility. Breathing exercises are helpful. Additional benefit may be achieved by having the patient sleep with the foot of the bed slightly elevated. This practice eliminates the pull of the liver on the diaphragm and permits better nocturnal aeration of the lungs. Overweight patients should be placed on weight reduction diets.

Recently Gordon and his colleagues have been experimenting with intermittent positive pressure breathing equipment in the treatment of emphysema. The reported early results are encouraging, but additional critical evaluation is necessary before this form of therapy can be recommended without reservation. It is particularly important to partition the observed benefits with appropriate pulmonary function studies so as to determine whether the improvement is due to the aerosol administered and/or intermittent positive pressure breathing. The author has used this form of therapy with gratifying results in several critically ill patients.

The prevention and effective treatment of bronchitis are of utmost importance in the therapeutic management of emphysema. A combination of an appropriate sympathomimetic agent and one or more of the antibiotics by aerosol is exceptionally effective when emphysema and chronic bronchitis coexist. Cor pulmonale is a frequent complication of emphysema. When it supervenes, the usual cardiac measures may be

employed, but only after the respiratory failure has been treated. Treatment of the cardiac features first may prove fatal.

Regardless of the various therapeutic measures in emphysema, the ultimate prog-

nosis is very poor. In this instance as in all other diseases prevention is still the best treatment. Surgical intervention should be considered and may be indicated in the presence of large bullous blebs or cysts.

## INFECTIOUS MONONUCLEOSIS WITH ACUTE THROMBOCYTOPENIC PURPURA

### REPORT OF CASE

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Infectious mononucleosis is an acute infectious disease of unknown etiology. It is usually benign, but there are increasing reports in the literature of serious and alarming complications associated with this disease. It would seem that this disease is more common than suspected. Bennike<sup>2</sup> reports 166 cases of infectious mononucleosis out of 835 patients admitted to the hospital with a diagnosis of acute tonsilitis. This 20% is compared with 8% seen in 1938 and he suggests that the disease may be on the increase. It is a disease of youth, and appearing as it does sporadically and in epidemic form is easily dismissed as "flu," tonsilitis or a common cold. Because of possible serious complications, the practitioner should keep infectious mononucleosis in mind and whenever possible prove the diagnosis.

Variously described under the terms acute lymphadenosis with lymphocytosis, monocytic angina, lymphocytic angina, lymphatic reaction and glandular fever,<sup>19</sup> infectious mononucleosis is characterized by irregular fever, sweating, swelling of the lymph nodes, sore throat, splenic enlargement and lymphocytosis. Abnormal lymphocytes are present in the blood, and the serum contains antibodies against sheep erythrocytes in high titer (Paul-Bunnell or heterophile agglutination test). The disease continues for from seven to fourteen days. Specific therapy is of little value and spontaneous recovery is usual.

The diagnosis from the clinical picture is not always easy because of the diversity of manifestations. The blood picture and Paul-Bunnell test are necessary for accurate diagnosis. However, Press, Shlevin and Rosen,<sup>19</sup> in reviewing 96 consecutive cases at the Jewish Hospital in Brooklyn, state that a negative Paul-Bunnell test does not preclude the diagnosis. Repeated agglutina-

tions and white cell counts may be necessary to demonstrate typical findings. Early, in fact, they state that there may be a leucopenia. Also the Paul-Bunnell test may be negative at one stage of the illness and significantly positive at some other time. This test is considered diagnostic if positive in a titer of 1:56 or higher by the Davidson modified technic.<sup>11</sup> Though once thought to be specific for infectious mononucleosis, Schultz<sup>20</sup> has found this test positive in Hodgkin's disease, agranulocytosis, lymphatic leukemia, monocytic leukemia, myelogenous leukemia, polycythemia, sarcoma, other than Hodgkin's disease, and tuberculosis. Titers of 1:56 or greater were found in all these diseases with the exception of lymphatic leukemia.

Reported complications of infectious mononucleosis include hepatic dysfunction,<sup>8, 10, 17, 27</sup> cirrhosis of the liver,<sup>14</sup> Guillian-Barre's syndrome,<sup>12</sup> and other neurologic complications,<sup>4, 5, 22, 27</sup> thrombocytopenic purpura and other bleeding disorders. For example, bleeding from the kidney follows in some cases. Involvement of the lymphatic tissue of the appendix leading to appendectomy is reported by Straus.<sup>23</sup> In this respect, when the abdominal lymph nodes are predominantly involved, a clinical picture resembling appendicitis may be present.

When thrombocytopenic purpura occurs as a complication, the question of splenectomy arises. This posed a problem in the case here reported. Schwartz,<sup>21</sup> in discussing thrombocytopenic purpura, divides the cases according to eosinophiles in the bone marrow. He states that the presence of eosinophiles, 50 or more in his count, is a good prognostic sign of spontaneous recovery, whereas if the marrow eosinophile count is low, "less than 50," spontaneous re-



covery is doubtful and splenectomy should be considered. He reviews 30 cases of thrombocytopenic purpura in the series.

The case here reported is that of thrombocytopenic purpura following infectious mononucleosis. Relatively few such cases have been reported. Eight cases seem beyond dispute as being proven cases of thrombocytopenic purpura associated with proven infectious mononucleosis. Additional cases strongly suggestive of this relationship are reported.

#### CASE REPORT

The patient, a 12 year old white male, was admitted to St. Margaret's Hospital on 28 November, 1949 with a chief complaint of painful, swollen, left inguinal lymph nodes and fever. Seen first at home, the temperature was 104° at about 8:00 P. M.

History revealed that on 25 October, 1949 the patient had sustained a simple complete fracture of the middle 1/3 of the left femur. After suitable traction by means of a Kirschner wire through the tibial tubercle, on 4 November an open reduction of the fracture was performed. The patient was placed in a spiker plaster cast. He was discharged on 15 November, and remained in excellent physical condition until 27 November, when he developed a head cold and sore throat. Then late on the 28th, he developed high fever, left inguinal pain and adenopathy.

Physical examination on admission revealed a febrile child in the above described plaster cast. There was infection of the pharynx. The anterior cervical nodes were palpable but not tender. The left inguinal nodes were enlarged, discrete and exquisitely tender. Pain radiated down the anterior thigh. Because of the history, wound infection was suspected. Penicillin therapy was immediately instituted. A window was cut through the cast overlying the operative site but the wound was found in excellent condition with absence of any tenderness of the surrounding area.

On the 29th no additional physical findings presented. The temperature remained elevated. The blood count showed red blood count 4,500,000; hemoglobin 12.5 gm.; white blood count 5,000; polymorphs. 55%; lymphocytes 45%. There was anisocytosis and poikilocytosis. No malaria was seen. The urine was yellow, cloudy, acid; specific gravity 1.020, albumin 1 plus, microscopic 4-5 white blood cells, 20-30 red blood cells, oc-

casional hyaline cast. The chest x-ray was negative. Sedimentation rate was 25 millimeters in 60 minutes.

For the next 24 hours the temperature varied between 100° and 103.4°. The white blood count rose to 7,050 with 50% polymorphs. and 50% lymphocytes. The urinalysis was negative except for an occasional hyaline cast. The Paul-Bunnell test was positive through dilution 1:256. Aureomycin was added to the treatment.

For the next eight days the temperature was irregularly elevated. Penicillin had been discontinued on 1 December, and aureomycin discontinued on 5 December. The patient did not appear acutely ill and the painful swelling of the lymph nodes was absent on 4 December. The temperature came to normal on 8 December, and remained normal thereafter. The spleen was not palpable and no other lymph nodes were involved.

On 9 December, the patient developed epistaxis. There was a small purpuric spot on the left forearm. There was no history of a bleeding tendency in either the patient or his family. The blood pressure was 130/88. The blood count showed red blood count 3,850,000; hemoglobin 11.5 gm.; white blood count 6,000, with 40% polymorphs. and 60% lymphocytes. There were 53 small lymphocytes and 7 monocytes. The platelet count was 19,250. The prothrombin time was 100% of normal.

Epistaxis continued intermittently despite packs. The purpura appeared on all visible areas of the body (portions not covered by cast) and the mucous membranes of the mouth and lips. There was gross hematuria and increased bleeding after trauma. The platelet count fell to 3,500.

Treatment consisted of Koagamin, vitamins K and C, and multiple small whole blood transfusions. The patient was type B, RH positive.

On 15 December, improvement was evident. The epistaxis and hematuria ceased on 16 December. The purpura gradually faded. The platelet count was 88,000 on 21 December, and the patient was discharged on that date.

The patient has been seen on numerous occasions since that time. There was subsequent excellent union of the fracture. He has remained in good vigorous health and has shown no bleeding tendency 3 years after his episode of thrombocytopenic pur-

pura complicating infectious mononucleosis. A blood count on 27 March, 1951 showed 4,770,000 red blood cells; hemoglobin 12 gm.; 8,200 white blood cells, with 65% polymorphs. and 35% lymphocytes and a platelet count of 130,000. On 16 Sept. 1952 the red cell count was 4,800,000; white blood cells 7,250, with 74% polymorphs. and 26% lymphocytes; platelet count of 225,000.

#### REVIEW OF LITERATURE

In 1921 Tidy and Morley<sup>25</sup> wrote in the *British Medical Journal* of the bleeding tendency in "glandular fever." Tidy and Daniel<sup>26</sup> in 1923 reported in *Lancet* that hematuria resembling acute glomerulonephritis occurs in glandular fever. They pointed out that the blood loss was out of proportion to the severity of the "nephritis." The first report of a low platelet count seems to be that of Cottrell<sup>6</sup> who in 1927 reported 12 cases of infectious mononucleosis, one of which had a low platelet count. The patient had no hemorrhage. The platelet count was 77,600. Minot's case,<sup>18</sup> "Infectious Mononucleosis: A Non-Fatal Case Simulating Leukemia With Anemia and Thrombocytopenic Purpura," appeared in 1929. There was no Paul-Bunnell test, otherwise this would be the earliest complete case reported. Dameshek and Grossi<sup>7</sup> reported a case of thrombocytopenic purpura in infectious mononucleosis with a Paul-Bunnell test positive in a titer of 1:640, but the patient recovered only after splenectomy. Bernstein's case<sup>3</sup> continued to have a bleeding tendency after recovery from infectious mononucleosis with thrombocytopenic purpura, and had a negative Paul-Bunnell test but with the clinical signs and symptoms of infectious mononucleosis. The platelet count was 30,000.

Bennike<sup>2</sup> reports 3 cases of hemorrhagic diathesis occurring in a series of 166 cases of infectious mononucleosis. Two cases in the series had low platelet counts.

Perhaps the first case of thrombocytopenic purpura complicating infectious mononucleosis, where a positive Paul-Bunnell test was reported plus other "proof," is that of Magna and Brooks.<sup>16</sup> In 1942 they reported the case of a 20 year old female who developed hemorrhagic spots on the legs seven days after the onset of infectious mononucleosis. There was inguinal adenopathy and a low platelet count.

Tager and Klinghoffer<sup>24</sup> reported a similar case, with the heterophile antibody test

positive in a titer of 1:32. No platelet was seen on the smear.

Lloyd<sup>15</sup> reported the case of a 30 year old male whose purpura appeared 2½ weeks after the acute illness, characterized by weakness, fever and sweating. The Paul-Bunnell test was positive in a titer of 1:512. The patient developed epistaxis and hematuria.

Goldbloom and Denton<sup>9</sup> report the case of a 9 year old male whose platelet count was 90,000 and the Paul-Bunnell test positive 1:1024. There was epistaxis, hemoptysis, petechia, and ecchymosis.

Kutzer and Allen<sup>13</sup> report two cases. The first, a 7 year old female, developed purpura, lymphadenopathy, palpable spleen, and white blood cells 12,000, with 50% atypical lymphocytes and only an occasional platelet seen on the blood smear. The Paul-Bunnell test was positive in a titer of 1:128. Their second case, that of a 27 year old male, had purpura, conjunctival hemorrhage, and white blood cell count of 7,600, with 30% polymorphs., 60% lymphocytes, 3% monocytes, and 7% atypical lymphocytes. No platelet was seen on the smear and the Paul-Bunnell test was positive in a titer of 1:256.

Angle and Alt<sup>1</sup> report a case in this series, with purpura, thrombocytopenia and a positive Paul-Bunnell test.

Wallerstein and Madison<sup>27</sup> reported in June 1950: "Infectious Mononucleosis with Hepatic Dysfunction, Thrombocytopenic Purpura and Isolated Peripheral Nerve Palsy." The patient, a 25 year old white male, exhibited all three of the more serious complications, namely: hepatic dysfunctions, thrombocytopenia and neurologic involvement. The onset of the disease was with malaise, fever, fatigue, head cold, sore throat, cervical adenopathy, and axillary, inguinal and epitrochlea lymphadenopathy.

The Paul-Bunnell test was positive in a titer of 1:1792. The blood picture showed 31% polymorphonuclearcytes with 1 eosinophile and 69% lymphocytes, many abnormal. The platelet count was 40,000 at the onset of purpura and later fell to 10,000.

#### SUMMARY

The occurrence, signs, symptoms, and diagnosis of infectious mononucleosis are briefly discussed. Complications of infectious mononucleosis found in the literature are reported.



A case of an acute illness in a twelve year old white male, with intermittent fever, lymphadenopathy, relative lymphocytosis, Paul-Bunnell test positive through dilution 1:256, purpura with marked bleeding tendencies and a platelet count, at its lowest 3,500, is presented. The patient had sustained a simple fracture of the left femur thirty three days prior to the onset of illness. He has remained free from any bleeding tendency. A recent blood picture is considered normal.

There is a review of the literature concerning thrombocytopenic purpura as a complication of infectious mononucleosis.

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**Peptic Ulcer**—Until relatively recently it was deemed most unwise to give a patient blood during the active phase of bleeding from an ulcer. The apparent logic behind this misconception of treatment was as follows: If blood is given the blood pressure will be elevated and if this occurs the clot will be blown out and further hemorrhage ensue. It was considered ideal to maintain the patients just above deep shock levels. A frequently used routine was to give the patient 10 cc. of blood from a syringe every 30 minutes in an effort to replace blood without elevating blood pressure. More recent experience has taught us that it is far better and more physiologically sound to promptly bring the patient out of shock with an amount of blood necessary to accomplish this end. Improved mortality figures indicate that elevation of the blood pressure is not an added risk to the patient. Sustained shock with its accompanying anoxia is far more serious than the risk of further bleeding.—Jones, J. M. A. *Georgia, March '53.*

INTRAMEDULLARY NAILING OF FEMORAL  
FRACTURES

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The use of intramedullary fixation has been developing over the past fifty years. Only recently, however, has it enjoyed extreme popularity. Intramedullary fixation had been tried by Delbet in 1906; Nicolaysen in 1907, and Lambotte in 1913. During the period from 1916 to 1918 Hey Groves experimented extensively with massive intramedullary nails. He used nails of all descriptions, solid cruciform, hollow and perforated nails. He consistently used the retrograde method of insertion for femoral fractures. Many other forms of intramedullary splints have been devised and used of metal, ivory, beef bone and human bone. The complications of rarefying osteitis and aseptic necrosis secondary to the foreign material used caused complications which eventually resulted in abandonment of these procedures. Rush of Meridian, Mississippi, in 1939 first began the wide utilization of intramedullary fixation by Steinman pins. In 1940 Lambrinudi and Davis first advocated the use of intramedullary fixation by means of Kirschner wires. Wide flanged nails were utilized in the Finnish War of 1942 but were not too successful due to the blind method of nailing. Intramedullary nailing of femoral fractures received its greatest emphasis during the War in the hands of the German operators, notably Kuntcher. The first inkling of the large scale use of this method for fixation of femoral fractures appeared when repatriated prisoners of war returned to their homelands of France and America. Since the cessation of World War II the development of intramedullary fixation has proceeded at great pace, and there is a wide variety of types commercially available for utilization and fixation of practically every bone. The end results of this fixation in sixty-one cases are the basis for this paper. (Table I.)

The figures for humerus, tibia and metacarpal area are of no statistical significance. The percentage of union following utilization

of intramedullary fixation in femoral fractures is very high. Fractures of the radius and ulna have given an alarming percentage of non-unions in our experience, and we have gradually confined intramedullary fixation to segmental fractures of these bones, where no other form of fixation is practical.

A symposium at the 1951 meeting of the American Academy of Orthopedic Surgery presented the combined results of many centers and these amounted to seven hundred cases of intramedullary fixation. The conclusion reached by this symposium was that intramedullary fixation is a treatment of choice in fractures of the femur where technical difficulties do not preclude its use. It does have some utilization in fractures of the humerus and ulna. Our subsequent remarks on intramedullary fixation will be confined to its utilization in femoral fractures. The contents of Table II are self explanatory.

TABLE I

|                  | Total | Union | Non-Union | Graft |
|------------------|-------|-------|-----------|-------|
| Femur .....      | 46    | 43    | 1         | 6     |
| Humerus .....    | 3     | 3     | 0         | 2     |
| Radius-Ulna ...  | 10    | 4     | 6         | 5     |
| Tibia .....      | 1     | 0     | 1         | 0     |
| Metacarpal ..... | 1     | 1     | 0         | 0     |
| Total .....      | 61    | 51    | 8         | 13    |

TABLE II

|                  | Assoc.<br>Injury | Hosp.<br>Days | Infect. | Hosp.<br>Days<br>after<br>Fixation |
|------------------|------------------|---------------|---------|------------------------------------|
| Femur .....      | 23               | 65            | 2       | 33                                 |
| Humerus .....    | 0                | 27            | 0       | 25                                 |
| Radius-Ulna ...  | 0                | 24            | 0       | 20                                 |
| Tibia .....      | 1                | 120           | 1       | 120                                |
| Metacarpal ..... | 0                | 2             | 0       | 2                                  |
| Total .....      | 24               | 238           | 3       | 200                                |

Presented before a meeting of the staff of St. Vincent's Hospital, Birmingham.

The following is an outline of the contents of this presentation:



## A. Methods and Materials.

1. Indications, advantages and limitations.
2. Anatomy of medullary canals.
3. Measurement of intramedullary nails and equipment necessary for insertion.
4. Technique of insertion by retrograde method.
5. Additional extra-medullary supportive measures.

## B. Complications and Errors.

1. Incarceration of nail.
2. Improper postoperative care.
3. Faulty callus formation.
4. Shock and death.
5. Infection.
6. Mal-union.
7. Non-union.
8. Retraction of the pin.
9. Gluteal limp.
10. Synovitis of knee joint.

## C. Utilization of intramedullary fixation in pathologic fractures.

## D. Utilization of intramedullary fixation for non-union of the femur, humerus, tibia and forearm.

*Methods and Materials:* The use of intramedullary fixation theoretically appears to come close to the ideal set-up for successful treatment of fractures. Accurate hair-line reduction is maintained without separation of fragments. The adjacent joints and muscles are permitted every physiologic activity during the healing period without disabling stiffness. The shortened period of total and partial disability usually results in earlier ambulation in lower extremity fractures. Protracted long periods of physical therapy and hospitalization are avoided. As a result

of early ambulation, light work and sedentary work may be pursued at an early date. There is a lifting of the economic strain incidental to long hospitalization and rehabilitation. Many of the psychologic disadvantages of prolonged immobilization are removed. Especially is this valuable in the unstable individual, the aged, and those with pathologic fractures. Certain definite limitations have become apparent with the passage of time. Intramedullary fixation is definitely a major operative procedure. The patient's general condition must be able to withstand and justify such an extensive operation. The danger of infection is always present, and undue chances in utilizing this form of fixation in open or compound fractures should not be taken. Intramedullary fixation should be limited in general to the adult age group. Simpler methods are successful in children. It has been used in pathologic fractures, and in osteogenesis imperfecta. It has also been found useful in the adolescent age group for shaft osteotomies. The area two or three inches below the lesser trochanter extending over the middle half of the bone distally to about four inches from the adductor tubercle is considered the area for successful utilization of this method in the femur. The ends of the pin should be enmeshed in cancellous bone and an intact segment of canal isthmus should be discernible between these two. Supplementary fixation of comminuted fragments by small encircling wires or screws has widened the use of intramedullary fixation.



Fig. 1. The typical massive callus seen following use of the diamond nail. Note the fracture line is still visible nine months later, but that the medial bridge of callus offers rigid support.



Fig. II. The extramedullary use of screws to fix a large cortical fragment.

Delayed union and non-union have been successfully managed by the use of intramedullary fixation with added cancellous bone grafts. The correction of mal-union by similar technique deserves every consideration. Segmental fractures offer a most fertile field for the utilization of this method. Pathologic fractures, the result of secondary metastatic carcinoma, Paget's disease, osteogenesis imperfecta, fibrous dysplasia of bone cysts, together with osteitis fibrosa cystica, have all been treated with intramedullary fixation. As a means of fixation in femoral shortening, angulatory and rotatory osteotomies, and knee arthrodeses, this method has a wide use. It has been advocated as a means of femoral fixation in co-existing burns and where other multiple fractures exist.



Fig. III. The use of the diamond nail in bilateral femoral fractures at two separate operations resulted in union. The proximal portions of both project too far above the greater trochanters and the distal tips do not extend as low as the ideal.

*Anatomy of Medullary Canals:* There is wide variation in the size of medullary canals, even in the same individual. Variable factors include age, sex, life work, muscle strength, past and present diseases, and type of habitus. In the antero-posterior view, the femur appears straight, while in the lateral view, it has a slight anterior bow. The narrowest part of the canal is just proximal to the mid-shaft. The canal extends from the level of the lesser trochanter to the mid-flare of the femoral condyles at the lower end. These areas above and below the medullary canal are filled with spongy bone and are the ideal sites for anchorage of the proximal and distal portions of the intramedullary pin, and theoretically substantiate the clinical observation that a long nail gives the best fixation. The medullary canals of older people are wider and will usually accommodate the eleven millimeter diamond nail. The medullary canals of osteomyelitic processes usually require the nine millimeter nail unless a reamer is used. Previous fractures of the femoral shaft often decrease the medullary canal in diameter and cause irregularities which may preclude the use of medullary fixation. The average femur will accommodate a diamond nail from forty-two to forty-six centimeters in length. Many methods have been used for the measurement of length of medullary canals. X-ray exposure of a calibrated centimeter rule at the level of the greater trochanter and at the knee, and measurement of the space between, has been used successfully. The simplest method is the distance from the tip of the greater trochanter to the knee joint, subtracting one inch, or two and one-half centimeters.

There appears to be no accurate preoperative method of ascertaining the diameter of the femoral canal, and an adequate supply of all diameters of nails and lengths of nails is desirable. The insertion of the diamond nail requires the threaded extractor impactor, only, for its insertion and removal. It is desirable to have vise-grip pliers for stubborn impactions and also a hacksaw for similar reasons. The usual assortment of instruments for open reduction of femoral fractures is utilized. One of our group utilizes a fracture table for positioning the patient in the lateral position with the fractured thigh uppermost. The others use the ordinary operating table with the patient held in place with sand bags, and restraining tape.

*Technique of Insertion of the Nail:* We



have confined ourselves to the use of the diamond nail. The retrograde manner of insertion is utilized. Choice of an incision is extremely important. In the antero-lateral femoral approach of Henry one separates the rectus femoris and vastus lateralis and the only muscle cut is the vastus intermedius which hugs the femoral shaft in its middle two-thirds anteriorly. The femoral fractures are exposed subperiosteally and a trial reduction attempted. An appropriate diamond nail is then tapped into the distal fragment to be sure that it fits, and then in a retrograde manner the screw end is tapped up the proximal fragment until the screwed proximal end can be felt just above the greater trochanter. It is evident at this point

that the position of the thigh with slight hip flexion facilitates subsequent insertion. When the proximal end has been delivered through a small transverse incision, the inserter is screwed onto the femoral nail. The fracture is then reduced and the nail tapped down the femoral shaft. A slight difference in note will be heard when the inserter strikes the greater trochanter. Check x-rays in the antero-posterior and lateral views of the knee should be made for nail length. The long axis of the diamond nail should lie in the frontal section if this is possible. It is advantageous to apply a mild pressure dressing over the wound, held in place with ace



Fig. IV. An ideally placed nail; nevertheless a pulmonary embolus may occur. This was the only such case observed in the series.



Fig. V. Just proximal to the greater trochanter may be seen the calcified bursa, a frequent complication, and possible cause of persistent gluteal limp.



Fig. VI. Retraction of the nail. The patient complained of the nail coming (a) out his hip pocket; (b) under general anesthesia, the inserter was re-attached and proper position attained and held.



Fig. VII. Small arms fire had severed the femoral artery and vein, with subsequent amputation. At the initial exploration of the vessels a diamond nail was inserted. This gave a good stump for femoral prosthesis. The danger of infection was more than offset by the need for salvage of all possible femoral length.

bandages which should extend from toes to groin. The patient is then moved to a fracture bed and placed immediately in balanced suspension, with a Thomas Splint and Pearson attachment. This elevates the part and immobilizes it, and helps relieve the patient's pain and swelling, postoperatively. The use of supplementary extra-medullary fixation has gradually been enlarged until there are very few femoral fractures which do not lie within the scope of intramedullary fixation. The use of encircling wires advocated by Kuntcher has been supplemented by screw fixation of loose fragments. The intramedullary nail does not offer complete insurance against rotatory forces, and the postoperative use of a plaster spica where there is danger of such rotation has been advocated. Kuntcher originally advocated a transverse loop of stainless steel wire across the fracture site which he felt would prevent rotation as well as distraction.

**Complications and Errors:** Intramedullary femoral fixation is an operation of major proportions. Adequate whole blood should be available, and some shock should be anticipated. Occasionally during the operation, the nail may become impacted in the retrograde manner of insertion. Such a complication can be avoided by checking the intramedullary canal for size before the insertion by the judicious use of reaming or

Stryker broach. If the nail should become so tightly impacted it cannot be removed, the suggestion has been made that the operator saw off the protruding portion except for enough to extend it a few inches into the distal canal, close the wound and have the patient return in three weeks for removal. The nails usually loosen in their tracks during this period. The postoperative care in the past has occasionally included the use of tibial skeletal traction with resulting distraction of the femoral fragment. If the patient's hips are not flexed during the inser-



Fig. VIII. (a) Six months after Albee sliding graft, and with gross motion an (b) intramedullary nail without bone graft was inserted. Such optimism (c) was unjustified. The nail was not inserted far enough distally. Note the small calcified plaque at the tip, marking the pendulum swing of the nail with motion. (d) A "long" nail was inserted six months later, accompanied by cancellous (e) bone. Union was progressive and continuous following this procedure.





Fig. IX. After five months of skeletal traction a la' Kirk the patient was fitted (a) with a caliper. He refractured while turning in a wheel chair. (b) Three months following diamond nail and cancellous bone graft, union appeared clinically solid.

tion of the nail, undesirable wandering during retrograde insertion may occur with presentation of its proximal end in alarming anatomic locations, as above the ilium or at the costal margin. It is well to take an antero-posterior view and lateral view of the femoral condyles before closing. The errors to be fallen into by dependence on one view are obvious. The inserter should not be disconnected proximally until one is sure that the nail is down far enough, as it is sometimes difficult to re-attach it in the large gluteal fatty area. It seems redundant to mention that the antero-superior iliac spine should be lined up with the patella in order to avoid rotation or malalignment. As in all femoral fractures, there is a tendency for the "position of rest" to be one of slight external rotation. The operator should be certain that this is soft tissue pull and not bony rotation.

The dangers of infection are always present as in any orthopedic procedure. The draping of skin, adequate hemostasis, gentleness in tissue handling all help here. Undue reliance on massive antibiotic therapy may give a false sense of security. Bending of the nail at the fracture site rarely happens. However, if it does, and early

check x-rays indicate bending, cautious manipulation may correct the angulation. Most diamond nails are 18-8 stainless steel which can be bent without breaking. Non-union most frequently results in this method from the use of too short a nail, one which does not engage the cancellous areas at each end of the femur. Reinsertion of a proper length nail and the introduction of autogenous cancellous bone slivers will result in final union in the great majority of cases. Retraction of the pin usually results from improper fit of the canal diameter and failure to introduce the nail far enough. Where the proximal projecting end can be felt in the area over the greater trochanter, the inserter is applied and the nail passed distally, and check x-rays made as in the original nailing. Gluteus medius limp is present in a distressingly high number of cases, and appears to be present on the basis of insertion of the nail through the gluteus medius and gluteus minimus at their mid-portions. Its spontaneous remission can certainly be promised with the passage of time. Postoperative synovitis of the knee appears to be on the basis of a post-fixation edema, and early and continuous quadriceps activities should be encouraged. Nails have been left in our cases for at least one year. X-ray evidence of obliteration of the cortical fracture line with surrounding massive callus is enough evidence to warrant removal. The point has been made repeatedly that this same type of fixation promotes early massive collection of fiber bone, but that the more mature lamellated bone takes the usual time for appearance. Callus is present early both palpable and by x-ray. The massive type of callus which appears, usually, molds as it matures. The use of the diamond nail in pathologic fractures is a distinct step forward. In lytic lesions, obliteration of the intramedullary canal is not a problem, but in the osteoblastic lesions, as in carcinoma of the prostate, Paget's and old osteomyelitis, the canal may have to be reamed with a drill or broach. Its use in osteogenesis imperfecta has recently been advocated by Trueta.

Some time is certainly needed for evaluation of this latter procedure. The use of a diamond nail, with supplementary autogenesis cancellous bone, appears to be a better treatment of non-union of the femur, satisfying the demand for rigid fixation with osteogenic stimulation. The loss of the endosteal front which is obliterated by the medullary nail is justified by the more per-

fect fixation and the exuberant periosteal callus. It is of paramount importance here that the nail engage cancellous bone at both ends of the femur. Intramedullary fixation with cancellous bone graft can be utilized to advantage in humeral non-unions, and offers an especial advantage at the upper third of this bone.

#### SUMMARY

Intramedullary fixation is most satisfactory and finds its strongest indications in the femur. The radius and tibia do not appear ideally suited for this form of fixation. Its use in non-unions and pathologic fractures is advocated in the humerus and femur. Indications, technique, and complica-

tions of this method have been outlined.

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## HYPERSENSITIVITY TO PROTAMIDE

### REPORT OF CASE

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Montgomery, Alabama

Protamide, a proteolytic enzyme prepared from hog stomach, has been in use for over ten years in the treatment of tabes dorsalis.<sup>1</sup> Its value was reported to lie in its ability to relieve the lightning pains of tabes in a high percentage of cases.<sup>2</sup> Some improvement in the ability to walk was also reported in those with ataxia.

Lately, this drug has been found to be of value in the control of the pain and itching occurring in herpes zoster.<sup>3</sup> In a series of 31 cases treated with Protamide, good to excellent results were obtained in 28. The remaining three cases were reported to have had such complicating factors as osteoarthritis of the spine and chronic alcoholism. Recently, Protamide was reported as being effective in relieving the fever and pruritis of chickenpox.<sup>4</sup>

From the Veterans' Administration Hospital, Montgomery.

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#### CASE REPORT

A 39 year old white male was admitted complaining of both pain and itching in the area of the right costal margin and the right axilla for three days. The symptoms had come on rather suddenly, and the patient was under the impression that it was an insect bite. He had noticed the presence of several small blisters about three inches below the nipple and later several more further back along the right lateral chest wall. They seemed to itch considerably on the surface. However, he felt that they were "tender underneath" and that pressure increased the pain and tenderness.

Past history revealed that the patient had previously been diagnosed as a case of arteriosclerotic coronary artery heart disease with a mild anginal syndrome, with EKG changes of a non-specific type of myocardial involvement. Nitroglycerin was used occasionally. There was no history of allergy in any form.

Physical examination revealed the presence of numerous 2 to 3 mm. vesicular lesions on 1 to 2 cm. erythematous bases distributed in two groups on the right anterior and lateral aspects of the chest wall. The groups of vesicles were arranged in a horizontal band formation consistent with intercostal nerve distribution. Pronounced hyperesthesia was present over these areas. The remainder of the physical examination was not remarkable.



The clinical impression was that this represented a rather typical case of herpes zoster. Laboratory studies including chest x-rays, CBC, urine and Kahn were negative.

Hospital course: The patient was given 1.3 cc. of Protamide intramuscularly on the day of admission. In approximately fifteen minutes he began to complain of severe generalized itching and also burning in the area of the injection. At the same time he complained of severe weakness and inability to breathe. There was some pain over the precordium. When seen by the ward physician the patient was found to be acutely ill. A generalized erythematous flush and urticaria were present. Both the bulbar and the palpebral conjunctivae were injected. The pulse was very rapid and weak. Respirations were labored and prolonged in the expiratory phase.

The patient was given 50 mg. Benadryl together with 100 mg. Demerol intramuscularly with 225 mg. Sodium Amytal by the same route with some immediate relief of the symptoms. This therapy was repeated in four hours with complete disappearance of all signs and symptoms of the reaction in approximately ten hours. Epinephrine was not used in view of the history of angina. The patient felt a bit weak and apprehensive but showed no further evidence of urticaria or bronchospasm.

Since the possibility existed that the Protamide might have been injected directly into the circulation, several skin tests were performed a week later. Both intradermal and subcutaneous injections of a 1/100 dilution were used in doses of 1/10 and 1/2 cc. respectively. The intradermal test produced a wheal 25 mm. in diameter and a surrounding area of erythema approximately 15 cm. in diameter. The subcutaneous test produced a similar area of erythema with a poorly defined area of induration in the center about 5 cm. in diameter. The wheal lasted for three hours while the areas of erythema persisted for 24 hours with severe itching. A mild tachycardia was also present.

Six normal individuals were then skin tested using similar dilutions and test doses. Careful histories were taken to rule out those with any evidence of hypersensitivity to pollens, foods or contact irritants. The reactions in these individuals were all very similar. The wheals produced by the intradermal injections did not exceed 7 to 10 mm. in diameter. The areas of erythema extend-

ed up to 5 cm. in diameter. Both the wheals and the erythematous areas were gone in 6 to 10 hours. It seemed evident that the skin test done on the patient with herpes zoster showed an exaggerated response as compared with the tests done on normal individuals.

#### DISCUSSION

The experience with the use of Protamide at this hospital had been derived from treatment of a relatively small number of cases of herpes zoster. The results, however, seemed to indicate that this drug does have a place in the treatment of herpes zoster. In some cases the relief of symptoms was dramatic and quite clear cut. The symptoms of pain and itching returned when the drug was discontinued. Immediate relief was again obtained when the injections were resumed. It was not clear whether this drug altered the duration of the disease or not. The number of cases treated was too small for conclusions in this respect.

The experience with this case indicates that a sensitive patient may undergo a severe systemic reaction following a single injection of the drug. Since positive skin reactions occurred in test cases as well as in the sensitive patient, it is obvious that this method cannot be recommended as a criterion for ruling out a state of unusual hyperreactivity. It is quite possible that some patients might demonstrate a much greater sensitivity to the skin test than others and still tolerate the drug equally well.

Consequently, the safest method of administering the drug might be to begin with a fraction of the recommended dose and follow with the remainder in thirty minutes. The fraction arbitrarily chosen was 0.3 cc. It is given intramuscularly as recommended and followed with the full dose if no reaction occurs.

#### SUMMARY

A case of herpes zoster treated with Protamide is presented in which there occurred a severe systemic reaction immediately following the injection of the recommended dose. Skin tests performed later seemed to indicate a hypersensitivity as compared with the results in six other individuals.

It is evident that this drug should be used with caution, especially in those cases where a generalized hypersensitivity reaction might have serious consequences. It is recommended that a fraction of the original dose be given at first in order to reduce the severity of the reaction if one should occur.

## PEDIATRIC CASE REPORTS

Edited by  
**AMOS C. GIPSON, M. D.**  
Gadsden, Alabama

Case presented by

William M. Brock, M. D.  
Montgomery, Alabama

This 6 year old negro male was admitted to St. Jude's Hospital on October 27, 1951 with a chief complaint of abdominal pain and headache of 3 days duration. The onset of illness began 5 days previously when it was noted that he seemed drowsy, irritable, and had a slight fever. He had eaten little during his illness and for the previous two days had taken only small amounts of liquid. The abdominal pain, with distention and headache, had gotten progressively worse. During the previous 24 hours he had vomited several times. The past history was non-contributory. He had had only colds and minor illnesses. The family history was negative for heredofamilial diseases.

The physical examination on admission revealed an acutely ill, slight negro boy of 6 years with acute distention of the abdomen and in obvious pain. T: 103.4 rectally, P: 150, R: 34/min., B. P.: 110/60. There was a purulent discharge in the nares. The mucous membrane of the mouth was dry and coated, and the breath was foul. The chest was clear and the heart normal. The abdomen was markedly distended. There was generalized tenderness to palpation over the entire abdomen, more marked in the left lower quadrant. A provisional diagnosis of "acute surgical abdomen" was made and the patient was prepared for an emergency laparotomy.

On opening the abdomen a small amount of fluid was encountered. The bladder was distended to the level of the umbilicus. There was generalized enlargement of the mesenteric lymph glands. The appendix was not inflamed but was removed. A urethral meatotomy was performed and the distention of the bladder relieved by catheterization. The postoperative condition of the patient was satisfactory.

**Urinalysis:** The urine was loaded with pus (wbc), albumin 1 plus, acetone 3 plus. Blood count: RBC: 4.2 mil., Hb. 11 gm., WBC: 13,700, Stab. 10, Segs. 76, Mono: 2, Lymph: 22.

**Course in hospital:** The patient continued to spike daily fever to 103-104 degrees. It

was thought that this was on the basis of a kidney infection because of the pus in the urine and an NPN of 54 mgm. %. An intravenous pyelogram was normal. Blood Ca: 7.0 mgm. %. Serum Phosphorus: 6.4 mgm. %. On the 4th day in the hospital the typhoid "O" antigen was 1:80. On the 9th day it had increased to 1:160 and on the 14th day the typhoid "O" antigen was 1:320, the "H" antigen was 1:40. Culture of the blood on the 5th day was negative. Cultures of the urine and stool revealed *E. coli*. The treatment in the hospital consisted of intravenous fluids and blood transfusions, penicillin and streptomycin by injection, Gantrisin and Chloromycetin orally, and general supportive and nursing care. In spite of treatment he ran a fever, spiking, of 103-104 daily for 2 weeks which fell by lysis to normal during the 3rd week. The NPN and urine returned to normal in 2 weeks. He was discharged as much improved on the 23rd hospital day.

A diagnosis of typhoid fever was made on the basis of the typical clinical course and rising titer of typhoid "O" antigen. This was checked in 2 laboratories. The cultures of blood, urine and stool were taken too late to identify the *E. typhosa* organism.

This case is presented because of (1) the unusually severe onset which simulated an acute surgical emergency. The complication of urinary retention probably aided in confusing the picture; and (2) typhoid fever in Alabama is not an unusual or rare disease. There were 74 reported cases of typhoid and 12 cases of paratyphoid in 1951.

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**Parent-Child-Doctor Relationships**—Although the general practitioner and pediatrician cannot be expected to treat effectively the more profound of the emotional and personality disorders which they occasionally encounter in a parent, they can greatly relieve the rank and file of the parents of the unnecessary anxieties, needless feelings of frustration, and feelings of inadequacy and guilt which so many parents nowadays experience when they are confronted with the usual problems of the child's growing up and his clumsy first attempts to adjust to family and social routines. The relieving of the parent of emotional tensions and the making of the role of the parent more comfortable is by no means superficial treatment, for an anxious parent is most likely to have an anxious child, and a frustrated, resentful, punitive parent is most likely to have a frustrated, resentful, and punitive child.

The physician helps parents with their emotional discomforts in several ways. For one thing, his authoritative information helps them to come to their conclusions and make their decisions with more feeling of security. For another, his optimism, hope, and courage may be catching.—*Shirley, Arizona Med., March '53.*



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TREATMENT OF HICCUPS

“Benign, self-limited hiccups are common phenomena experienced by almost everyone at some time or another. However, persistent hiccups may cause the victim great distress and be refractory to most treatments. Patients are first distressed, later endangered by persistent hiccups. Vomiting, acid-base and fluid imbalance, malnourishment, and exhaustion may follow. In the post-operative patient, wound dehiscence is an added danger. Methods of treatment from the simplest to the severest must be tried successively until relief is obtained. Because hiccups may be such a dangerous complication during and after surgery, this paper will review the experience of others in addition to some of our own in the hope of achieving the best possible management of the problem.”

The above is the opening paragraph of the article by Gigot and Flynn<sup>1</sup> published in the Journal of the American Medical Association. The Boston investigators go on to tell us that “The etiology of hiccups, which is probably the most important consideration in directing satisfactory treatment, is complex. Several classifications have been outlined in the literature, but probably a simple grouping into peripheral and central causes is the most useful. Common peripheral causes are irritation or dilatation of the stomach, intestine or peritoneum, subphrenic abscess, perihepatitis, and diaphragmatic and other hernias. Pulmonary diseases such as tumors, pleurisy, laryngitis, bronchitis, or pneumonia may be factors at times. Mediastinal and esophageal lesions, cardiac enlargement, and pericarditis have been implicated. In order of their incidence Bailey found hiccups to be greatest in bladder and prostatic operations, followed next by colon operations (particularly if obstruction was present) and then by peritonitis. Weiss encountered three cases of severe hiccups that complicated acute coronary occlusion. Another persistent case of hiccups was described as the sole symptom of a large aneurysm of the thoracic aorta.”

We are further told that “Treatment is notably disappointing, as is evidenced by the hundreds of remedies that have been tried, none of which have been regularly curative. Simple hiccups, which are self-limited, may

1. Gigot, Albert F., and Flynn, Paul D.: Treatment of Hiccups, J. A. M. A. 150: 760 (Oct. 25) 1952.

respond to many different treatments and pharmacologically dissimilar drugs. These benign types, often the result of simple gastric irritation, may respond well to carminatives. Other remedies include physical or psychic counterirritative methods such as traction on the tongue, inhalation of ether fumes, drinking cold water, and sudden fright. Sedatives, such as bromides and the barbiturates, often give relief.

"However, the solution of the problem of treating persistent hiccups requires more than empirical remedies. The cause should be corrected, whenever one is suspected. Since dilatation and irritation of the stomach are such common etiological conditions, gastric lavage is often the first therapeutic step. Antispasmodic drugs, for example, amyl nitrite, may be helpful. Nairn reported one case of hiccups that lasted four days and was cured by amyl nitrite inhalations after many other remedies had failed. Shaine has shown that benzedrine sulfate has a specific gastrointestinal antispasmodic effect and has reported a favorable response to this drug in two patients who had hiccups. Central etiological factors should not be overlooked since many such conditions may be treated effectively. In this respect, the urinary output and nonprotein nitrogen should be measured if uremia is suspected.

"Even though the cause remains unknown, several drugs and procedures may be used as a rational treatment for intractable hiccups. Other more empirical measures are frequently helpful. It is important to follow a definite sequence of therapeutic steps until the condition is relieved."

The authors go on to discuss some methods of treating hiccups—counterirritation, atropine, heavy sedation, carbon dioxide, and phrenic nerve block or phrenic nerve crush, which must rarely be resorted to. The Boston investigators have done well to call our attention to one of the most annoying and at times dangerous entities to be encountered in practice. Practitioners should bear their warnings in mind and, above all, should be more inclined to hospitalize promptly persons suffering with severe hiccups.

#### **RICHMOND MEETING WORLD MEDICAL ASSOCIATION**

Men from a dozen medical colleges and a score of specialties will report the latest developments from the frontiers of medicine

to the First Western Hemisphere Conference of the World Medical Association at Richmond, Va., on April 24.

New uses in medicine for atomic particles, hormones, and blood fractions; advances in surgery of the heart; lungs and pancreas, and new applications of psychiatry in the family doctor's day-by-day practice will be explored at the gathering of physicians from 48 states and the medical societies of Latin America.

Dr. Louis H. Bauer, president of the American Medical Association and secretary-general, World Medical Association, will moderate at a dinner meeting and summarize the outstanding conclusions of the day's panel discussions.

Medical schools with which participants are affiliated include Johns Hopkins, Harvard, New York University, Northwestern, Chicago, Wayne University, North Carolina, Baylor, Emory, Minnesota, Stanford, the University of California at Los Angeles, and various Latin American institutions.

The general practitioner's viewpoint will be represented by Dr. U. R. Bryner of Salt Lake City, president-elect of the American Academy of General Practice. Guests of honor include 75-year-old physicians appointed by the Governors of the various states, many of whom have devoted half a century to general or specialized practice.

Specialists taking part in the panels include Dr. Leo H. Bartemeier, Detroit, psychiatry and neurology; Dr. Henry K. Beecher, Boston, anesthesiology; Dr. Alfred Blacklock, Baltimore, surgery; Dr. Kenneth M. Brinkhous, Chapel Hill, N. C., pathology; Dr. Clinton Lee Compere, Chicago, orthopedic surgery; Dr. Michael E. DeBakey, Houston, thoracic surgery; Dr. Andrew H. Dowdy, Los Angeles, radiology; Dr. Nicholson J. Eastman, Baltimore, obstetrics and gynecology; Dr. John D. French, Long Beach, Calif., neurologic surgery; Dr. William G. Hamm, Atlanta, plastic surgery; Dr. Charles B. Huggins, Chicago, urology; Dr. Julius Lempert, New York, otolaryngology; Dr. Irvine McQuarrie, Minneapolis, pediatrics; Dr. Howard A. Rusk, New York, physical medicine and rehabilitation; Dr. Edgar Scott, Birmingham, proctology; Dr. James S. Simmons, Boston, preventive medicine and public health; Dr. Marion Sulzberger, New York, dermatology and syphilology; Dr. Derrick Vail, Chicago, ophthalmology; and Dr. Dwight L. Wilbur, San Francisco, internal medicine.



These physicians are each contributing a chapter to a commemorative volume on "Seventy-five Years of Medical Progress." Dr. Bauer said the book, to be issued by the World Medical Association, "will form a valuable record of every field of medical

practice during a most important period of human history, when major gains have been made in the conquest of disease and the lengthening of life." Costs of publication are included in a grant by A. H. Robins Co., Inc., Richmond pharmaceutical house, which covers the costs of holding the conference.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### THE QUESTION MARK

(The following questions and answers appear in the latest pamphlet prepared by the Committee on Medical Service and Public Relations. Copies of this pamphlet may be obtained by writing the Public Relations Office.)

#### WHAT IS CHIROPRACTIC?

Chiropractic, in the medical sense, claims that all disease is due to one cause and can be cured by one method. Those who practice chiropractic claim that all disease is underlain by nerve interference. The cure is an "adjustment" which realigns the vertebrae of the spine, thus relieving the pressure on the nerve and allowing nerve impulses to flow freely again. Some chiropractors adjust other portions of the body, but the spinal "adjustment" is always indicated.

Chiropractors do not believe in the accepted theory that germs cause disease; instead they say that germs attack only diseased tissues and that their ability to attack is due to improper flow of nerve energy to the diseased tissue. Theirs is a drugless treatment; so the modern miracle drugs have no place in their practice.

So by the chiropractic theory, you need an adjustment when suffering from diphtheria. If Montgomery had a diphtheria epidemic and Birmingham did not, by the chiropractor's claim one would have to assume the spines of Montgomery children all got out of alignment at the same time while the Birmingham children's spines remained in good working order.

#### WHY IS CHIROPRACTIC AN UNSOUND THEORY?

Science has proved that vertebral dislocation is rare. Nerves are made up of very small fibres, and nerve pressure in a slight dislocation is unlikely because of the comparison of size of the nerve fibres and the well-padded openings through which they pass.

Science has further proved that most nerves from the brain and lower spine leave through rigid rings of bone which no amount of manipulation can move. The heart, lungs, or bladder (to mention but a few organs) are supplied by these nerves, and disease in these organs could not be caused solely by nerve pressure.

Science has also proved that there are some body tissues which are not supplied by nerves, the blood, for example. It is as susceptible to disease as any organ with a direct nerve connection with the spine. Pernicious anemia and leukemia are diseases falling into this category.

And science has proved that disease germs can and do attack living tissue—no matter what the position of the spine. In typhoid, malaria, diphtheria, tuberculosis, or syphilis, science has proved that bacteria or other micro-organisms are always present.

#### WHAT DISEASES WILL CHIROPRACTORS TREAT?

Judging from chiropractic textbooks or recent advertisements in Alabama newspapers, one would conclude that they will treat practically everything. Naturally the advertisements do not promise a cure; but by giving so-called case histories and statements from patients, the hope of a cure can be aroused in the minds of the unsuspecting.

The following, along with others, appeared in a recent advertisement under the heading "A Partial List of Conditions Treated by Chiropractors": stomach troubles, including ulcers; female diseases; sleeping sickness and other brain fevers; deafness and other ear troubles; blindness and other eye troubles; nephritis and other kidney troubles; tuberculosis of the lungs and other parts of the body; heart trouble of all kinds; undeveloped children (mentally or physically); multiple sclerosis; liver troubles; gall bladder troubles; headaches, all types.

Diarrhea, goitre, diabetes, tonsilitis, asthma, bronchitis, anemia, leukemia, gall stones, kidney stones, hay fever, appendicitis, sore throat, rickets, shingles, hiccough, lumbago, catarrh, pleurisy, piles, tumors, epilepsy, and cancers.

#### WHAT IS THE DANGER TO YOU?

The greatest danger lies in the lack of adequate medical training which chiropractors have. No college of chiropractic is affiliated with or recognized by the Association of American Colleges. How is a chiropractor to determine whether or not his type of "treatment" is best for a disease unless he has a general medical knowledge? No matter what the disease, he uses his treatment for everything; for by his training disease is caused by nerve interference.

Delay in diagnosis and in employment of the proper remedy may lead to a more serious illness or even to death. Some diseases can be cured when caught early, but when allowed to run on, cannot be remedied. Cancer, for example, to be successfully treated must be recognized early. This delay is perhaps the greatest danger to an individual.

There is danger to the community, too, in the field of communicable diseases. If spinal adjustments are substituted for vaccines and the antibiotics, there is danger of spread of the disease in the community.

#### WHAT DO THE CHIROPRACTORS WANT?

Simply stated they want a self-governing licensure board which is free of all control by anyone who has a competent medical knowledge. In other words they want a board composed of men who lack a comprehensive knowledge of treatments for diseases of the human body, so that this group may pass on others who have an equal lack of qualifications.

Licensure does not and cannot improve the quality of chiropractic care. It cannot make a poor chiropractor a good one. It cannot make a man a better practitioner who says, in explaining his theory of tetanus, "If you step on a nail, that shocks you and subluxates the vertebra and that locks the jaw. The adjustment relaxes the subluxation and relieves it and unloosens the jaw." And that statement was made under oath in 1949 by a licensed chiropractor who was president of the Texas Chiropractic College.

At present chiropractors are supposed to take a comprehensive examination before the Board of Medical Examiners. There are

reportedly some two to three hundred practicing in Alabama at present; four have passed the prescribed examination. It would seem from their last proposed legislative bill (1951) that a good number of people who cannot or have not qualified to treat the human body want to be legalized by legislative action.

#### WHY DOES THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA OPPOSE A SEPARATE BOARD OR ANY WEAKENING OF THE PRESENT LAW?

Despite cries of selfishness, monopolistic desires, and the like, the truth of the matter is this. The physicians who make up the Medical Association know that they have a moral obligation to protect the health of their patients from the unscientific. They know further that by law the Medical Association is charged with protecting the health of the people of Alabama, and that too many people do not differentiate one "doctor" from another.

They also know that vertebrae are rarely dislocated, that direct pressure on nerves by the vertebrae is practically impossible except in serious fracture or injury, that spinal nerves have relatively little to do with diseases of such internal organs as the heart and lungs, that many diseases are known to be caused by bacteria, and that the specific cure of certain diseases is known to be drugs or surgical operation, not the reduction of "subluxations." They also know that improper diagnosis and delay can be dangerous or even fatal.

Knowing these things, the Medical Association must oppose the dignifying of chiropractic by giving it a separate board. Feeling that an informed public can make better decisions, the physicians of Alabama must bring this information to your attention and at the same time fulfill its moral and legal duty by opposing a separate chiropractic board.

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With progressive improvement in treatment, fewer tuberculosis patients are dying of the disease. Therefore, for isolation treatment in hospitals, for aftercare, and for rehabilitation, we will probably continue to require more, not fewer, beds for some time to come.—*Division of Hospital Facilities, Public Health Reports, July 1952.*

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Tuberculosis is worldwide and relatively few countries have progressed so far as or beyond the United States in their schemes for its control. With the notable increase in international travel and especially in aviation and now the resettlement of displaced persons, protective immigration policies assume added importance.—*Kendall Emerson, M. D., Connecticut M. J., May 1952.*



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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

### CARE CAN PREVENT TRICHINOSIS

Nobody has any definite idea as to how many of us Americans contract trichinosis in the course of a year. However, a prominent public health official recently declared that the yearly total might exceed 300,000.

That official was Dr. Vernon B. Link, medical director of the U. S. P. H. S. Communicable Disease Center in Atlanta. He suggested the 300,000-a-year total at a meeting in Chicago devoted to a study of that disease. The meeting was held at the headquarters of the American Medical Association.

Dr. Link's suggestion may have come as a surprise to many people. For there is nothing in the official records to indicate that that many cases occur every twelve months. Actually, it was pointed out at that meeting, only 366 cases were reported from the entire country in 1951. However, many states do not require the reporting of trichinosis cases, Alabama among them. The reason, presumably, is that any case-reporting records would be all but useless, since they would be completely unreliable. For cases of trichinosis, like bad colds, are seldom diagnosed by physicians, at least not for a long time. And only cases of any disease that are treated by physicians are added to the public health records. That is why public health authorities make no secret of the fact that the public health records covering a number of illnesses—influenza and pellagra, to mention just these two—do not tell the whole story. And, when the cases of any form of illness, such as trichinosis, which are reported represent only a small fraction of those actually occurring, it is entirely reasonable that the public health agencies in a number of states prefer not to keep such records at all. In view of this fact, it is quite understandable that only 366 cases were officially added to the case-reporting records in 1951, against a possible total of considerably more than a quarter of a million cases actually occurring.

Trichinosis is one of the penalties of life's pleasant things. It is the price many people have to pay for enjoying sausage and other pork products. But, fortunately, it is not a penalty which has to be paid. We can enjoy such products to our hearts' content without running the risk of getting trichinosis.

One way to avoid it is to eat only the meat of hogs which do not have this disease. And that, admittedly, is hard to do. For, when we buy sausage and other pork products at our favorite stores and markets, we take what is placed on sale. We have no way of finding out what kind of food the hogs ate before being slaughtered. The chances are that the merchant who sells them does not know either. For those products have usually been handled by two or three others before he sees them. As a matter of fact, even the farmer who owned a hog may not even know. For he does not have the knowledge which is necessary for an examination. And this examination is made after the hog has been butchered.

Fortunately, there is another way of being safe, as far as trichinosis is concerned. And it is a relatively easy, certainly an inexpensive, way. It consists of cooking all pork products thoroughly. This will be discussed in greater detail a little later in this paper.

As any farmer does not need to be told, many hogs eat garbage. It is inexpensive, even free in most cases. (That is a good way of getting rid of it.) And they seem to like it. There is no danger of trichinosis if the garbage does not contain the trichinosis parasites. But often it does. For garbage is not one thing or even a few things, but many things. And it often contains rats, mice and other small animals which are heavily infested with those parasites. They in turn infest the hogs which eat them, unless the garbage is cooked before they eat it. And cooking is expensive and difficult in other ways.

Bacteriologists and veterinarians have little trouble identifying that parasite, which is more accurately described as a parasitic worm. It is about 1/25 of an inch long. Doc-

tors know it as the *Trichinella spiralis*. While still in the larval stage, it becomes imbedded in hogs' muscular tissues. Usually it is still in that stage when the animal is slaughtered and eaten. Encased in transparent capsules, those larvae of course enter the mouth with the meat. From there they go, also with the pork or pork product, to the stomach. There those capsules are dissolved, and the larvae emerge. Free at last from that imprisonment, they bore into the walls of the intestines. After leaving the larval stage and reaching full maturity, they begin reproducing rapidly. It is said that every female trichinosis parasite is capable of producing some 1,500 eggs. Then the process begins all over again, just as it did in the animal's body. First the eggs are hatched. Then the parasites enter the larval stage. Then they escape from that imprisoning capsule. Then they grow to maturity. Then that cycle starts again with the laying of eggs.

Before reaching full maturity in most cases, the parasites spend some time in the lymph spaces of the intestinal wall. From there they travel to the blood stream. Then they go to the heart—"like a swimmer swept along by a swift current of water," someone has said of them. And from the heart, where the blood starts its long, intricate circuit of every small area of the body, they travel with it to distant, as well as nearby, places. But, as they do when they are in the body of a hog, they seek the muscles. There they find lodgment, boring between the muscle fibres.

As is true of numerous other forms of illness, it is pretty hard to say exactly when a human trichinosis victim becomes a trichinosis victim. However, medical authorities have set the onset of the disease, not at the time of infestation, when those parasites enter the body in hog meat, but at the time when they become established in the walls of the intestines.

Trichinosis' initial symptom often is a stomach upset, usually such a slight one that the victim does not pay any attention to it. Later there are others, more severe. Still later he suffers muscular pains. The victim experiences twitching of the muscles. He feels weak, all worn out. As time goes on, more disturbing symptoms appear. There may be difficulty in breathing. Swallowing, chewing and even talking may also be difficult. (Exactly where this type of diffi-

culty occurs depends upon which muscles are involved.) Chills add their discomfort to the patient's troubles. There are headaches. The victim does not know what it is. But he knows he is sick. That feeling is increased when the eyes become puffy and the throat sore. If he becomes sufficiently concerned over his condition to take his temperature, he is almost certain to find that he has considerable fever.

The fever increases as the acute, or first, phase of the illness ends and the second begins. A blood examination at that stage shows an increase in the white blood cells.

Then, after a while, the third stage begins. The patient suffers from anemia. The skin often, but not always, erupts. The temperature shoots up and drops in an unorthodox and unpredictable way. Pneumonia is a serious danger at that stage. The patient and his doctor need to exercise particular care to avoid it.

Those three stages may be said to mark the normal course of the disease. But the patient is not yet out of the woods. He has a long way to travel still. For convalescence still lies ahead. And convalescence in trichinosis is no easy matter of taking things easy and waiting for complete recovery. For one thing, it is slow. For another, it is painful. There is very little the doctor can do while the patient waits for those troublesome parasites to be "bottled up" in those transparent capsules. Recovery from this disease might be compared to recovery from pulmonary tuberculosis. For that type of recovery also comes from "bottling up" the causative organisms—in that case, the tubercle bacilli. And, like the tuberculosis victim, the person with trichinosis stays well or suffers a relapse as a result of his ability or inability to keep those troublesome parasites "bottled up."

As already indicated, trichinosis can be prevented by avoiding pork or pork products from hogs which have this disease. And that in turn can be accomplished in two ways: Farmers and other hog growers can be sure their hogs do not eat anything that could give them trichinosis. Or they can boil, or cook, all garbage fed to their hogs. Since garbage is almost certain to contain trichinosis-infected rats or other small animals sometime or other, the only way hogs can be prevented from eating trichinosis-infected garbage is to boil or cook all they eat. And, as indicated, that is rather an expen-



sive process. It almost certainly would add materially to the cost of pork production, and that cost inevitably would be passed on to the purchaser, giving another sharp boost to the high cost of living. And the same thing is true of feeding hogs something besides garbage, the second preventive measure available. Any alternative food would be much more expensive than garbage. And here again the higher cost of pork production would be passed on to the purchaser of such products. Ignorant as most people are of the dangerous potentialities of trichinosis, many of them are willing to run the risk of getting this disease, or allowing their families to get it, rather than pay the relatively high cost of preventing it in this way.

Fortunately, however, as also has already been pointed out, there is still another way by which trichinosis can be prevented. And it is relatively easy and inexpensive. Moreover, it has the advantage of placing the responsibility of protection upon the pork purchaser or a member of his family. It consists of seeing that all pork and all pork products are thoroughly cooked before being served. If you wish, you may obtain a food thermometer and see that all products of this kind are heated to a temperature of about 165 degrees. However, that is not necessary. All you need to do is to cook them until they have lost their pink color and turned grey. Be sure that this color change has occurred all over every portion that is being cooked. Be especially careful to see that it has extended to the inside areas—nearest the bone. Cooking pork products almost long enough may be like having the second largest navy: It may not be enough.

Cooking pork and its products sufficiently is easy in most households. Except in the homes of the wealthy, the wife and mother or an older daughter does the family cooking. The one responsible for that task when pork products are served can simply be reminded that they are to be cooked as already explained. Or, better still, everybody about the house who does any cooking—and that includes the colored cook, if you have one—should keep in mind constantly that pork and pork products are to be cooked extra long.

If you eat out, either all the time or only occasionally, your problem may be somewhat more difficult. But not much. Then you tell the waiter or waitress to have your pork or pork products cooked extra long. If you want to be specific, you can ask that

they be kept on the fire until they turn grey all over. If you don't wish to be as specific as that, you can content yourself with asking that they be cooked longer than usual. Then, if what you ordered is still pinkish-looking, you can ask that it be taken back to the kitchen and cooked some more.

In New York City, it is illegal for a waiter or waitress to take an order for any pork product to be cooked rare. That city also forbids delicatessens and grocery stores to sell ground meat for hamburgers to be eaten rare if the meat includes uncooked pork. Such meat may include pork. But it must be cooked.

The State Department of Health does not wish you to become so afraid of trichinosis that you will stop eating sausage and other pork products. These are wholesome foods, and there is no reason why you should not enjoy them. All you need to do is to be careful.

## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

January 1953

### SPECIMENS EXAMINED

|   |        |
|---|--------|
| Brucella cultures .....   | 13     |
| Examinations for diphtheria bacilli and Vincent's .....         | 317    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 943    |
| Typhoid cultures (blood, feces and urine) .....                 | 426    |
| Examinations for malaria .....                                  | 112    |
| Examinations for intestinal parasites .....                     | 2,720  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 24,486 |
| Darkfield examinations .....                                    | 5      |
| Examinations for gonococci .....                                | 1,643  |
| Examinations for tubercle bacilli .....                         | 3,112  |
| Examinations for meningococci .....                             | 2      |
| Examinations for Negri bodies (microscopic) .....               | 164    |
| Water examinations .....  | 1,474  |
| Milk and dairy products examinations .....                      | 4,690  |
| Miscellaneous .....   | 1,534  |

Total 41,641

With all the additions and improvements in clinical and laboratory procedures, the diagnosis of tuberculosis is more difficult than ever. This is because we have progressed from a stage of making the diagnosis by positive sputum and gross physical signs or marked x-ray changes to a point where the infection is detected when no gross destruction of tissue has taken place. This means negative sputum, no abnormal physical signs, and early changes on the x-ray films.—*John H. Skavlem, M. D., West Virginia M. J., Dec. 1952.*

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

|                                    | Dec. '52 | Jan. '53 | E. E.*<br>Jan. |
|------------------------------------|----------|----------|----------------|
| Typhoid and paratyphoid fever..... | 2        | 6        | 2              |
| Undulant fever .....               | 6        | 2        | 1              |
| Meningitis .....                   | 14       | 23       | 10             |
| Scarlet fever .....                | 71       | 88       | 61             |
| Whooping cough .....               | 31       | 25       | 81             |
| Diphtheria .....                   | 25       | 21       | 29             |
| Tetanus .....                      | 5        | 1        | 2              |
| Tuberculosis .....                 | 136      | 155      | 185            |
| Tularemia .....                    | 1        | 1        | 1              |
| Amebic dysentery .....             | 3        | 1        | 2              |
| Malaria .....                      | 3        | 1        | 10             |
| Influenza .....                    | 252      | 35312    | 771            |
| Smallpox .....                     | 0        | 0        | 0              |
| Measles .....                      | 146      | 260      | 92             |
| Poliomyelitis .....                | 10       | 8        | 2              |
| Encephalitis .....                 | 0        | 1        | 0              |
| Chickenpox .....                   | 323      | 617      | 228            |
| Typhus fever .....                 | 0        | 4        | 9              |
| Mumps .....                        | 71       | 141      | 124            |
| Cancer .....                       | 402      | 364      | 317            |
| Pellagra .....                     | 1        | 4        | 1              |
| Pneumonia .....                    | 155      | 705      | 256            |
| Syphilis .....                     | 125      | 170      | 731            |
| Chancroid .....                    | 5        | 3        | 10             |
| Gonorrhea .....                    | 240      | 317      | 533            |
| Rabies—Human cases .....           | 0        | 0        | 0              |
| Positive animal heads .....        | 50       | 70       | 0              |

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

TYPHUS ERADICATION DEMONSTRATION PROJECT, GENEVA COUNTY

Contributed by

J. P. Gilbert

Assistant Sanitary Engineer

In March 1952 the Communicable Disease Center, a branch of the U. S. Public Health Service, proposed the establishment of an experimental typhus eradication demonstration program in a selected county in Alabama. The purpose of the program was to investigate the possibility of obtaining typhus eradication in the rat population in a countywide area. It was also desired to determine the length of time required, together with a cost analysis of materials and labor expended. The program as planned was set up to operate continuously for a minimum of two years.

Geneva County was selected as the test area for several reasons. Relatively few typhus control activities had been carried on in the rural area in the past due to the county's refusal to appropriate necessary funds for participation. Also, past surveys showed the existence of a very high percentage of typhus positive rats with a relatively high ectoparasite index.

It was planned to employ all control measures used in connection with previous county typhus control programs, including 10% DDT powder for ectoparasite control and poison bait and cyanide gas for rat extermination. In addition, it was decided to use Warfarin, a recently developed anticoagulant compound, as the poisoning agent; the material to be mixed with yellow corn meal and exposed in metal bait boxes for protection of livestock and other animals around the premises treated.

For field operations, beat maps of the county were prepared, with the beats divided into divisions containing from 100 to 150 premises. Premises in each division were numbered for identification with the identifying beat, division and premise number being stencilled on the house when visited. A form was developed for recording individual premise surveys, conditions found, and treatment necessary. A tabulation form was prepared for recording field operation data to be used for analysis and study of the program.

The Geneva project was set up with the CDC furnishing five federal employees, transportation, necessary equipment and materials, including DDT, Warfarin and cyanide gas. The county's participation included the furnishing of four men, one from each of the four commissioner districts, and the required bait material.

The project was put in operation in April 1952 and field work is now being carried on from a mobile laboratory provided by CDC. The laboratory is well equipped for processing rats trapped for entomologic analysis and the preparation of desired records and reports.

The project operations progress by beats in three separate phases: sampling, treatment, and evaluation. The sampling crews make the initial contact, check the premises for signs of rat infestation, and trap premises where indicated. Rats are trapped alive, placed in cloth bags, numbered, and brought to the laboratory. The rats are anesthetized with Nembutal and the blood taken hypodermically. The blood is then centrifuged and forwarded to the CDC laboratory for complement fixation examination.

The treatment phase follows closely behind sampling. Ten percent DDT powder is dusted in rat runs and harborages for rat ectoparasite control. Bait boxes containing Warfarin bait are placed where needed.



A liquid poison bait, arsenic water, is left with the occupant, with instructions and precautions for its proper use.

Following a period of three to four weeks, allowing time for the Warfarin bait to be exposed, the evaluation crew makes inspections of the degree of rat infestation, and additional trapping is carried on to determine the results of the DDT dusting and poisoning activities. Bait boxes are recovered and the amounts of poison bait taken are recorded.

Sufficient information has not been accumulated at this time to determine definitely the degree of effectiveness of the project. For somewhat similar county typhus programs undertaken in the past it has required a period of two to three years before a measurable degree of typhus control was apparent.

A preliminary check of work completed at this time indicates that about 60% of the rural premises inspected show signs of rat infestation. Following treatment of the premises and subsequent evaluation approximately 14% showed signs of infestation. Of the bloods analyzed during the first phase of the program about 18% were positive for typhus antibodies.

The program is being well received in the county. It is believed, if the program can be operated continuously for a period of two years, it will be possible for typhus fever to be practically eliminated in the rat population, and that rats and rat ectoparasites may be suppressed to such a low degree that the probability of contacting typhus will be reduced to a minimum.

**Crossed Eyes**—"How early in life can the treatment of crossed eyes be started?" The treatment of crossed eyes, without exception, should begin as soon as the eyes are noted to cross. In the infant this usually amounts to nothing more than the alternate patching of first one eye then the other in order to prevent the development of the "blindness" of disuse. In the young child the treatment is usually the prescription of glasses and the patching of the crossing eye. If surgery is needed, a child should have the benefit of an operation as soon as an adequate diagnosis can be made. This is usually around three or four years of age. If at all possible, the eyes should be straightened before the child is five and one-half to six, when his fusion powers would normally reach their full development. Other reasons have already been enumerated for straightening the eyes early.—*Phillips, J. Louisiana M. Soc., Feb. '53.*

## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

### PROVISIONAL BIRTH AND DEATH STATISTICS FOR NOVEMBER 1952, AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                       | Number<br>Registered<br>During<br>November 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|---|---|-------|---------|--------------------------|-------|-------|
|   | Total   | White | Colored | 1952                     | 1951  | 1950  |
| Total live births   | 6962  |       |         | 27.1                     | 25.7  | 27.7  |
| Total stillbirths   | 176   |       |         | 24.6                     | 23.8  | 27.8  |
| Deaths, stillbirths<br>excluded   | 2193  | 1336  | 857     | 8.5                      | 8.9   | 8.6   |
| Infant deaths:  |   |       |         |                          |       |       |
| under one year  | 232   | 107   | 125     | 33.3                     | 38.8  | 36.5  |
| under one month   | 77  | 28    | 49      | 11.1                     | 24.5  | 23.9  |
| <b>Cause of Death</b>   |   |       |         |                          |       |       |
| Tuberculosis, 001, 019  | 27  | 16    | 11      | 10.5                     | 27.0  | 22.2  |
| Syphilis, 020-029   | 9   | 4     | 5       | 3.5                      | 3.1   | 4.8   |
| Dysentery, 045-048  | 1   | 1     |         | 0.4                      |       | 1.2   |
| Diphtheria, 055   | 5   | 3     | 2       | 1.9                      | 2.0   | 2.8   |
| Whooping cough, 056   |   |       |         |                          | 0.4   | 1.2   |
| Meningococcal infections, 057   | 1   | 1     |         | 0.4                      | 1.2   | 0.8   |
| Poliomyelitis, 080, 081   |   |       |         |                          | 1.2   | 1.6   |
| Encephalitis, 082, 083  | 1   | 1     |         | 0.4                      |       |       |
| Malaria, 110-117  |   |       |         |                          | 0.4   | 1.2   |
| Malignant neoplasms, 140-205  | 255   | 179   | 76      | 99.2                     | 95.3  | 86.8  |
| Diabetes mellitus, 260  | 24  | 15    | 9       | 9.3                      | 10.6  | 11.9  |
| Pellagra, 281   | 3   | 3     |         | 1.2                      | 0.4   | 0.4   |
| Vascular lesions of central nervous system, 330-334                     | 286   | 175   | 111     | 111.2                    | 116.1 | 102.3 |
| Other diseases of nervous system, 300-318, 340-398                      | 34  | 17    | 17      | 13.2                     | 13.3  | 13.1  |
| Rheumatic fever, 400-402  | 4   | 2     | 2       | 1.6                      | 1.6   | 0.4   |
| Diseases of the heart, 410-443  | 698   | 468   | 230     | 271.5                    | 269.4 | 255.7 |
| Diseases of the arteries, 450-456                                       | 24  | 13    | 11      | 9.3                      | 11.0  | 10.3  |
| Other diseases of the circulatory system, 444-447, 460-468              | 30  | 14    | 16      | 11.7                     | 12.2  | 13.9  |
| Influenza, 480-483  | 25  | 18    | 7       | 9.7                      | 4.3   | 5.9   |
| Pneumonia, 490-493  | 78  | 38    | 40      | 30.3                     | 26.7  | 34.9  |
| Bronchitis, 500-502   | 5   | 3     | 2       | 1.9                      | 0.4   | 0.8   |
| Appendicitis, 550-553   | 4   | 2     | 2       | 1.6                      | 1.6   | 1.2   |
| Intestinal obstruction and hernia, 560, 570, 581                        | 15  | 10    | 5       | 5.8                      | 5.1   | 8.7   |
| Gastro-enteritis and colitis (under 2) 571.0, 764                       | 12  | 5     | 7       | 4.7                      | 8.6   | 5.5   |
| Cirrhosis of liver, 581   | 12  | 11    | 1       | 4.7                      | 4.3   | 4.0   |
| Diseases of pregnancy and childbirth, 640-689                           | 11  | 3     | 8       | 15.4                     | 8.9   | 9.7   |
| Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684 |   |       |         |                          | 1.5   | 1.4   |
| Congenital malformations, 750-759                                       | 22  | 14    | 8       | 3.2                      | 3.8   | 3.0   |
| Accidental deaths, total, 800-962                                       | 179   | 114   | 65      | 69.6                     | 75.7  | 69.8  |
| Motor vehicle accidents, 810-835, 960                                   | 90  | 68    | 22      | 35.0                     | 31.4  | 29.7  |
| All other defined causes  | 421   | 200   | 221     | 163.7                    | 145.1 | 140.3 |
| Ill-defined and unknown causes, 780-793, 795                            | 7   | 6     | 1       | 2.7                      | 42.7  | 48.8  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based on the November report of the years specified.

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## METABOLIC ASPECTS OF CONVALESCENCE

### THE 1953 JEROME COCHRAN LECTURE

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This lecture honors Jerome Cochran, who framed the Constitution of our State Medical Association and formulated our health and medical practice laws. These enduring statutes attest the greatness of the man in the fields of public health and medical jurisprudence. Today I would pay especial tribute to Dr. Cochran as a preeminent clinical scientist, and remind you that shortly after the yellow fever epidemic of 1878 he became recognized as the greatest living authority on the dread scourge of "Yellow Jack." This interest in the problems of febrile illness appears to have developed early, for it is recorded that his graduation thesis at the Botanico-Medical College in Memphis was a formal argument against the then current dogmas about fever and inflammation. Dr. Cochran came to Alabama after serving as a surgeon in the Confederate Army. Establishing himself in Mobile, he was elected Professor of Chemistry in the Medical College there. Not until the fifth decade of his life did he enter the field of public health.<sup>1-8</sup>

It is provocative to speculate that Dr. Cochran's early interest in fever and inflammation led him to successive careers in surgery, chemistry and public health. With this thought in mind, I have chosen to devote this memorial lecture to a consideration of the *biologic response to injury*, the modern counterpart of a thesis on fever and inflammation. Progress in this field demonstrates that metabolic alterations of considerable importance are quite regularly in-

volved. Although much of this information remains controversial, the basic concepts seem valid and their implications are important in the every day practice of medicine. It is proposed to review the metabolic aspects of convalescence from the following points of view:

1. Initiation of the stress response—first to twelfth hour.
2. The phase of apparent corticoid excess—first to fifth day.
3. The phase of apparent corticoid deficit—fifth to eighth day.
4. The phase of nitrogen retention—ninth to thirtieth day.
5. The phase of fat replacement—thirtieth to sixtieth day.<sup>29</sup>
6. The metabolic complications of convalescence.

*Initiation of the Stress Response:* Forty years ago, Cannon<sup>9</sup> called attention to the emergency function of the adrenal medulla and initiated the concept of a biologic response to the stressful situation. In 1936, Selye<sup>10</sup> began a series of investigations leading to identification of the adrenal cortex as a major participant in the stress response. Inasmuch as the secretory activity of the adrenal cortex is dependent upon pituitary release of ACTH, it occurred to Long<sup>11</sup> and his associates that epinephrine was responsible for the necessary pituitary stimulation. This thesis gained support when it was demonstrated that a reduction in total circulating eosinophils followed the injection of



cortisone, ACTH, or epinephrine and it was assumed that the observed eosinopenia was due only to cortisone-like steroids. Such an integrated activity of the sympathico-adrenal and the pituitary-adrenocortical systems was attractive to many,<sup>12</sup> but was early repudiated by Sayers.<sup>13</sup> More recently it has been shown that substances other than cortisone, especially epinephrine, have a direct eosinopenic effect, and Thorn<sup>14</sup> has concluded that "for the time being, 'epinephrine eosinopenia' in man must perforce be considered a phenomenon independent of adrenal cortical activity." This new information also rejects the suggestion of Hume and Wittenstein<sup>15</sup> that epinephrine effects upon the pituitary are mediated through the hypothalamus. It now appears unwise to attempt to identify the mechanism of the adrenal cortical activation in the stress response.

*The Phase of Apparent Corticoid Excess:* There is now excellent confirmatory evidence of adrenal cortical activation during the initial response to stress. Although 17-ketosteroid output may be increased following stress,<sup>16</sup> these values are not as regularly elevated as in patients with hypercorticism due to tumor or hyperplasia. The output of other urinary corticoids is regularly elevated<sup>19</sup> and parallels the eosinopenic phase of the stress response. In spite of all this evidence, it seems wiser to retain the concept that the fundamental tissue response to injury may in itself mimic the pattern of corticoid excess to considerable degree. Such a viewpoint seems necessary to explain many experimental incongruities, and leaves open for ultimate consideration such problems as increased sensitivity of target cells to minor fluctuations in corticoid concentration in the blood. Thus, the designation of the initial phase of the stress response as one of "apparent" corticoid excess emphasizes the inherently biologic participation of the cells concerned. This phase has the following characteristics:

1. Slight fever and tachycardia.
2. Fluid and electrolyte changes:
  - a. Reduced urine volume output.
  - b. Retention of sodium.
  - c. Loss of potassium.
3. Oxidation of depot fat as a major source of calories.
4. Increased urinary excretion of nitrogen.
5. Eosinopenia.

Hardy<sup>12, 19</sup> has implicated hyperfunction of the thyroid in the genesis of the *fever and tachycardia*, but tracer studies with radioactive iodine do not uniformly support such hyperfunction.<sup>16</sup> Although hypermetabolism parallels the corticoid excess, it seems wiser to avoid any simple explanation until the changes in intermediary metabolism are more clearly defined.

The *fluid and electrolyte changes* are readily correlated with the known effects of an excess of the variously designated "mineralo-corticoids"<sup>10</sup> or "sodium-potassium (Na-K)"<sup>17</sup> hormones, of which desoxycorticosterone acetate, or DOCA, is the prototype. Unfortunately, these steroids are not eosinopenic<sup>14</sup> and are not susceptible to quantitative excretion study. The evidence to date that an actual excess of these hormones exists is, therefore, dependent upon comparison and presumption only. Identification of the pattern of this biologic response has contributed significantly, however, to the understanding of fluid and electrolyte balance. The Na-K hormones have both renal and extra-renal effects. The effect upon the kidney is two-fold in that the rate and extent of water excretion is controlled and sodium is retained. Equally important is an extra-renal effect leading to intra-cellular accumulation of sodium<sup>18</sup> with an apparent alteration in the permeability of cell membranes.<sup>20</sup> The observed diuresis of potassium during this period suggests that it results chiefly from this altered cellular permeability with renal selection dependent solely upon the appearance of an excess of potassium in the plasma compartment of the extra-cellular fluid.

It has long been recognized that retention of sodium by the kidney is associated with excretion of potassium and, conversely, sodium excretion is associated with potassium retention. This inverse relationship, known as the Bunge phenomenon,<sup>21</sup> has been correlated with the processes of osmolar regulation.<sup>22</sup> Hence, the potassium loss associated with corticoid excess is to be attributed more to the sodium retention than to a direct effect upon the potassium. It is important to identify the fact that corticoid effects may give direction to osmolar regulation, but the two processes are not otherwise integrated.

The *altered metabolism and the eosinopenia* are correlated with a demonstrable increase in corticoids of which cortisone and

compound F are the important prototypes. The excess of these steroids in the stress response to surgical trauma may be regarded as proved.<sup>19</sup> The hormones involved regulate the metabolism of sugar, nitrogen and fat and are sometimes called the "S-N-F" hormones<sup>17</sup> or the "glucocorticoids."<sup>10</sup> The effects of these hormones upon intermediary metabolism have been recently reviewed.<sup>23</sup> There is decreased peripheral utilization of glucose with increased liver glycogen and blood sugar. Coincidentally there is increased oxidation of fat as a source of calories. The mechanism of action of adrenal steroids upon nitrogen metabolism is still controversial, but most recent studies indicate that the synthesis of new protein is retarded and that the break-down of whole protein is accelerated to account for the nitrogen loss.

The problem of *negative nitrogen balance*, as originally described by Cuthbertson,<sup>24</sup> stimulated much study of parenteral feeding of amino acid mixtures and protein hydrolysates.<sup>25</sup> Increasing comprehension of the finite limitations of the "metabolic pool"<sup>26</sup> has finally led most surgeons to realize that it is pointless to give unnecessary and poorly utilized protein products intravenously in the immediate postoperative period.<sup>18</sup>

*Mobilization of body fat* to meet the increased caloric demand of the stress response emerges as the most important development in this field of intermediary metabolism.<sup>18</sup> As fat is utilized, total body water shows a relative increase.<sup>27</sup> Thus, the initial phase of the stress response, in spite of important intermediary metabolic effects, presents its greatest challenge in the maintenance of fluid and electrolyte balance.

In *summary of the phase of apparent corticoid excess*, it appears that there is an increase in body water, retention of sodium with transfer of sodium into body cells, loss of potassium, degradation of protein and oxidation of fat. Study of the comparative effects of stress and adrenal cortical hormones shows many analogies. It would appear that adrenal hormones are essential for the initiation of the stress response, and that the response follows the pattern expected with cortical overactivity. For the time being, however, it remains likely that the stress response represents a fundamental biologic response to injury that is merely facilitated by adrenal cortical hormones.

This does not deny the utility of clinical analysis of the stress response in terms of cortical hyperfunction.

*The Phase of Apparent Corticoid Deficit:* The second phase of the stress response supervenes on the third to the fifth day after injury. Its onset is predictable on the basis of a rising total eosinophil count and confirmed by a reduction in the measurable corticoids excreted in the urine.<sup>19</sup> In its full development it has the configuration of a physiologic rebound with a higher than normal total eosinophil count and an abnormally low excretion of urinary corticoids. The total progress of this phase, however, does not follow the pattern of adrenal cortical failure; nor is it characterized by crises of fever, nausea and hypotension. The total absence of such crises in this phase is perhaps the strongest evidence that the stress response is facilitated by but not dependent solely upon corticoid participation.

The *fluid and electrolyte changes* are the most important features of this second phase and are characterized by:

1. Increased urine volume output.
2. Diuresis of sodium.
3. Retention of potassium.

In retrospect, these are the very changes essential to correct fluid and electrolyte dislocations remaining from the first phase. During the period of correction, it is significant that the hematocrit falls in what has long been recognized as post-traumatic hemodilution. This, again, is at variance with the situation in adrenal cortical failure wherein hemoconcentration develops. It must be concluded, therefore, that the observed changes are dictated by the physicochemical laws underlying osmolar regulation. Recognizing that a deficit of mineralocorticoids facilitates restoration of osmolar equilibrium, the observed changes should be regarded as another example of a superbly integrated homeostatic mechanism rather than as a pure endocrine effect.

The *urinary output of nitrogen* is gradually reduced during the second phase of convalescence. As dietary intake increases and provides calories as well as nitrogen, fat mobilization ceases and positive nitrogen balance develops.

*The Phase of Nitrogen Retention:* This third phase of convalescence usually begins by the seventh to the tenth day after injury



and lasts for about three weeks. Balance studies carried out concomitantly for nitrogen and potassium show a correlation consistent with the expected K : N ratio of protein anabolism. During this time, however, the patient does not gain weight and it must be concluded that the retained nitrogen is being utilized to repair deficits of protein in lean tissue solids.<sup>18, 27</sup> The eosinophil count may show considerable variation but tends to return toward a more usual value. Fluid and electrolyte balance is well maintained, the appetite is good and extra feedings are taken well. During this period of synthesis of new protein, adequate calories favor more rapid recovery. The duration of the phase of nitrogen retention reflects the intensity of the initial trauma and the extent of the protein deficit incurred. It is during this phase that the wound heals and gains tensile strength. Subjectively, the patient regains interest in his usual affairs and strength to perform his daily duties.

*The Phase of Fat Replacement:* This fourth and final phase of convalescence occurs during the second month after injury or illness and is the *phase of fat replacement*. During this period there is weight gain with full resumption of vitality. Body water returns to normal.<sup>18, 27</sup> Steroid excretion is entirely normal and the eosinophil counts are in no way unusual. Whether or not the parenteral administration of fats during the early stages of the stress response can mitigate the extent of depletion of stores of body fat awaits experimental analysis. The difficulties of preparation of fat solutions for parenteral use preclude precise study at this time.

*The Metabolic Complications of Convalescence:* It is of considerable interest that physiologic insufficiency of the adrenal cortex has yet to be defined as a complication of convalescence. Although adrenal cortical failure does occur during illness, the failure is recognized as a consequence of intrinsic disease of the adrenal. The major metabolic complications are recognized as:

1. Persistent or recurrent phases of corticoid excess, producing fluid and electrolyte imbalance.
2. Late pituitary failure, producing hypothyroidism.

The *persistence or recurrence of the phase of apparent corticoid excess* is of fairly frequent occurrence. Repetitive stress stimuli

occur whenever surgical intervention is necessary in the course of an illness or infection supervenes. When the time interval between two stimuli is short, as in the surgical treatment of acute appendicitis, there is little difficulty. Also, when the time interval between the two stimuli is ten days or longer, as is practical in staged operations, no immediate problems arise apart from the prolongation of the period for complete recovery. A major problem develops, however, when a second stimulus follows in such fashion as to delay the scheduled onset of the second phase.

The outstanding clinical example of this situation is the deep thermal burn. Here the initial injury evokes a maximal stress response and infection regularly supervenes as bacteria invade the devitalized tissue three to five days later. The onset of a second phase of corticoid excess, due to this secondary infection, coincides frequently with the time when osmolar regulation is withdrawing water and sodium from its intracellular position. The influence of corticoid excess dictates renal conservation of extracellular fluid with an excess of sodium. Plasma volume, as an integral compartment of the extracellular fluid, also expands, producing a hypernatremic hypervolemia with pseudo-anemia.<sup>28</sup> The clinical manifestations of the sudden increase of the extracellular fluid are those of interstitial edema and vascular overload. The resultant symptom complex is difficult to distinguish from incipient pneumonia, cardiac failure, pulmonary infarction or shock. The relatively regular occurrence of this complex fluid and electrolyte imbalance is also a feature of the clinical course of late intestinal obstruction.

Were the excess of adrenal corticoids solely responsible for the accumulation of sodium and water in the intracellular compartment during the initial phase of the stress response, one would expect a continuation of this trend during a phase of persistent corticoid excess. The fact that such is not the case suggests that osmolar regulation is another variant of the biologic aberration of the stress response and is, indeed, the dominant feature of the second phase of convalescence. The hazards of salt and water overload during the initial phase of the stress response received belated clinical recognition because so many patients tolerated the overload without obvious embarrassment when a diuretic second phase intervened in

an uncomplicated convalescence. The penalty for salt and water overload becomes apparent only when there is impairment of renal function by persistence of corticoid excess or intrinsic renal disease.

*Late pituitary failure*, occurring in the second month after a stress response, is known to complicate some protracted illnesses. Its dominant clinical feature is hypothyroidism. Suggestive evidence of its presence is excessive weight gain and loss of sexual desire. In women, there may be delayed menstruation and cystic changes in the breasts. It is especially prone to occur in elderly patients. Almost always a transient process, it demands only reassurance that the nightmares, arthralgias and anemia of hypothyroidism will soon disappear.

#### COMMENT

The basic pattern of convalescence, especially as it relates to recovery from surgical procedures, has been crystallized in the writings of Moore.<sup>18</sup> The investigations of Cannon,<sup>9</sup> Selye,<sup>10</sup> and Long<sup>11</sup> have established a mechanism of participation for the pituitary-adrenal axis in the sequence of events known as the stress response. As factual data accumulates, however, it is becoming evident that the stress response is more endocrine-facilitated than endocrine-dominated. Such a concept implies that there is a fundamental biologic response of tissue cells to injury and that several highly specialized homeostatic mechanisms are involved. In a sense, the sequential responses to stress are dependent upon the integrity of each of these mechanisms. Although it seems proved that an intact pituitary-adrenal axis is essential to the activation of the stress response, it would be mischievously presumptuous to assume that endocrine factors are the only essential mechanism in so complex a biologic phenomenon. It may well be that Hume's<sup>15</sup> observations upon the neurohumoral factor elaborated in the hypothalamus in response to afferent stimuli shall prove to be another essential factor in the stress response. The endocrine factors have an especial importance, however, in that current knowledge about adrenal cortical mechanisms permits some insight into the genesis and activation of a biologic process characterized by excesses or deficiencies of these steroids.

#### SUMMARY

Convalescence has been reviewed in terms of recovery from stress. The stress response

has been presented as a broad biologic phenomenon of diffuse genesis wherein endocrine factors facilitate but do not dominate the entire response. Considerable insight into the metabolic alterations of the stress response, however, is derived from comparison with other states wherein excesses or deficiencies of adrenal cortical steroids are established. It is concluded that fluid and electrolyte balance constitutes the major challenge of the initial phases of the stress response and that repair of protein and fat deficits is an obligation of the later stages of convalescence.

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## INEFFECTIVENESS OF ACTH AND RIBOFLAVIN IN CHRONIC PORPHYRIA

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Porphyria is a rare disturbance of metabolism whose etiology is obscure and for which no specific methods of treatment have existed. It has been divided into congenital and acute forms and a rarer mixed or chronic type. Linder,<sup>1</sup> Abrahams, et al.<sup>2</sup> reported cases in which the mineral metabolism suggested a state of relative adrenal failure. Although Prunty<sup>3</sup> concluded that the disordered electrolyte metabolism was not primarily adrenal in origin, it is natural that both ACTH and cortisone should be given a therapeutic trial in porphyria. Scattered reports have appeared in the literature to date regarding use of these hormones. Oltman and Friedman<sup>4</sup> reported no change in porphyrin excretion or therapeutic benefit following administration of ACTH to a pa-

tient with acute porphyria. Gilbert et al.<sup>5</sup> treated a case of acute porphyria with cortisone and noted a decrease in urinary porphyrin excretion but the fatal course of the disease was not influenced. Meyers and Griffith<sup>6</sup> treated a case of chronic porphyria with both ACTH and cortisone with no apparent change in porphyrin excretion and no evidence that the disease was favorably influenced. Watson<sup>7</sup> stated that of four cases *personally* known to him ACTH had produced prompt remission in three. In the other case there was no apparent benefit. Stich<sup>8</sup> reported that riboflavin in large doses had proved helpful in treatment and at Watson's suggestion it was administered to the patient under study. It is the purpose of this paper to report the ineffectiveness of both ACTH and riboflavin in the treatment of the chronic type of porphyria.

*Case Report:* Mr. H. H., a 45 year old white male merchant, was first seen at the

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Browne-McHardy Clinic\* in 1937 with the chief complaint of gas and bloating for seven years and a lump in the right upper quadrant of the abdomen intermittently for three years. For two months he further complained of constipation, and burning and gnawing in the epigastrium which was worse when the stomach was empty. In 1935 he had been hospitalized at Charity Hospital, New Orleans. X-ray studies of the gallbladder and upper gastro-intestinal tract were reported as being negative, but the left kidney was said to have been "enlarged and loose." No other findings were noted. Initial examination in 1937 was essentially negative except that the tip of the right kidney was felt on inspiration. The blood pressure was 120/85. Laboratory studies including complete blood count, urinalysis and Wassermann test were negative. The gastro-intestinal series reported a questionable fleck in the duodenal bulb and hypermotility. Also noted was an irritable colon. A third diagnosis of floating right kidney was made.

The patient was then hospitalized at Touro Infirmary, New Orleans, from the 9th to the 22nd of August 1937 on an ulcer program to which he responded with perhaps slight improvement. He returned in October 1937 stating that the epigastric burning was still present but he felt better in general. G. I. series still showed irritability of the duodenum, with slight irregularity of the base on the greater curvature side, suggestive of a duodenal ulcer. In January 1938 he still complained of the burning sensation and an abdominal support was recommended. He was not seen again until January 1941 when he returned stating that the "ulcer symptoms" had recurred in episodic fashion during the previous year. Amphogel and Kao-magma had provided partial relief at home. The symptoms continued despite treatment, and a marked cancerphobia was noted. Further complaints were constipation and low backache. During 1942 he experienced periods of relief and the episodes were not as severe as previously. In 1943 he returned again, complaining of "hurting and burning" in the epigastrium. In 1944 the stomach was re-x-rayed and duodenal irritability was reported. No ulcer could be seen. Gallbladder visualization was again negative. Symptoms continued through 1945, accompanied by backache which was not localized. Notes in the history during 1945 described him as

a "neuro." and emphasized the persistent cancerphobia. One consultant was "not impressed by the sincerity of the illness." Barium enema revealed a spastic sigmoid but was otherwise normal. Since there had been no improvement on any program of medical management, the patient was readmitted to Touro Infirmary, October 16, 1946, at which time an exploratory laparotomy was performed by Dr. J. D. Rives. The only positive finding was pericecal adhesions. Laboratory work at that time revealed a white blood count of 8,000, with ten eosinophiles, 28 neutrophiles, 56 lymphocytes, and 6 monocytes. Recovery was uneventful but the patient continued to complain through 1946 and 1947. An ulcer program of management did not give relief and he continued to complain of insomnia, gas, and burning in the epigastrium. Gastroscoy in 1946 was negative except for "considerable spasm."

In early 1947 it was felt that perhaps environmental factors played some part in his illness and it was recommended that either a trip to the country or further hospitalization might be helpful. Flare-ups of symptoms during periods of stress, such as a sale at his store, were noted. He was hospitalized at Baptist Hospital, New Orleans, at which time he was seen in neuropsychiatric consultation. The psychiatrist's conclusions were as follows: "I believe this man has a chronic tension state resulting from a rigid perfectionistic personality and a strict sense of devotion to work and duty and with little attention to any form of relaxation, hobbies and the like. I believe he will be greatly helped if you will explain to him the role of emotions in the production of gastro-intestinal symptoms. I attempted to give him some advice on his need for less attention to his work, more to various avocational pursuits." Interestingly enough, the patient manifested essentially the same personality characteristics later on while under the care of the author. In May 1950, at which time he was having his "ups and downs," his wife stated that he was very nervous, and related flare-ups of symptoms to periods of increased nervousness and stress. The patient was not aware of such and stated that he had no problems.

In August 1948 he was incapacitated for ten days with severe right-sided backache. Examination revealed only tenderness over the right sacroiliac region. A small umbilical hernia was detected at this time and

\*New Orleans.



there was some question as to whether it played a part in the symptoms. G. I. series was again negative except that the duodenal loop was reported to be slightly larger than usual. In November 1950, x-rays of the entire spine revealed minor hypertrophic lipping in the mid-dorsal and lower lumbar areas with slight thoraco-lumbar scoliosis. This was not believed to contribute to his symptoms. In December 1950 he began to have acute attacks of abdominal pain and spells of sweating and tingling of the feet. The sweating would spread upward accompanied by faintness. There was "churning" of the abdomen with considerable nausea. On several occasions he awoke during the night with acute anxiety panic states. Because of this flare-up he was again hospitalized at Touro Infirmary from December 27, 1950 to January 21, 1951 for further evaluation and observation. Urinalysis at this time showed a trace of albumin, 10 to 15 white blood cells per high power field, and one plus bacteria. For this reason urologic consultation was requested, and after cystoscopy and retrograde pyelography it was the opinion of the urologist that he was suffering from bilateral ureteritis with small ureters. Note was made that this condition "frequently caused reflex gastro-intestinal disturbances." X-ray studies of the urinary tract were reported as normal, otherwise. Gallbladder visualization was again negative and x-ray of the pancreatic area revealed no evidence of calcification. PSP test revealed a 70% dye excretion at the end of two hours, and the sedimentation rate was 54 mm./hr. by the Westergren method. Fasting blood sugar was 65 mgm. per cent and NPN 31 mgm. per cent.

The most impressive aspect of the history at this time was the fact that on several occasions he was awakened from sound sleep during the night in attacks of acute anxiety panic, accompanied by palpitation, pain around the heart, sweating and trembling. Prolonged discussions revealed no conscious psychogenic factors. Consequently, it was felt that the diagnosis of porphyria should be entertained. Urine specimens on January 6 and 8 were both reported as strongly positive for porphyrins. Twenty-four hour collection showed 28.5 Ehrlich units. The patient then recalled that his urine at times was slightly colored, especially in the morning. Examination of the bones and teeth revealed them to be normal, but the urine was

noted to turn dark on standing exposed to light. He then gave a history of light sensitivity, and further inquiry revealed that he had taken barbiturates off and on over a considerable period of time. The possibility that this played some part in the production of the porphyria was entertained. All barbiturates were, of course, stopped, and the patient put on a program of vitamin therapy including 100 mgm. of vitamin C daily, 2 cc. of Betalin complex and 2 cc. of crude liver intramuscularly. At the end of two weeks time he stated that he was 60% better. Twenty-four hour collection of urine was sent to Dr. Cecil Watson who reported: coproporphyrin 872 micrograms, uroporphyrin 491 mcg., and porphobilinogen 38 units per day. Dr. Watson felt that this was clearly a porphyria urine and suggested a trial of riboflavin in 10 mgm. doses 4 times a day. Riboflavin was started on February 12, 1951, and the patient reported that he was considerably better. He was able to do a full day's work for the first time in months, whereas, previously, he had been completely incapacitated. There were some flare-ups of gastro-intestinal and nervous symptoms from time to time but he observed that, whereas his urine had previously turned dark within twenty-four hours, it now took five days exposure to light to produce the same.

Riboflavin was stopped on April 18, 1951, and the specimen which was collected prior to the cessation of therapy was reported by Dr. Watson as follows: coproporphyrin 1277 mcg., uroporphyrin 1655 mcg. and porphobilinogen 14 units per day. Dr. Watson stated that it appeared highly unlikely that the riboflavin had had any effect whatsoever on the porphyrin metabolism despite the patient's clinical improvement. After riboflavin was stopped the patient had several bad flare-ups of symptoms and asked to resume therapy. Twenty-four hour sample urine collected before resumption of treatment revealed coproporphyrin 1015 mcg., uroporphyrin 2510 mcg., and porphobilinogen 21 units per day.

Riboflavin was resumed on May 10, 1951, but he continued to have his "ups and downs," with moderate to mild exacerbations of symptoms. Consequently, when a supply of ACTH\* was made available in June 1951, he was admitted to Touro Infirmary for trial on the hormone. Total period

\*ACTHAR-C supplied by Dr. Harley Cluxton, Armour and Company, Chicago.

TABLE I

|                                      |                    |                     |                    |               |           |           |                    |
|--------------------------------------|--------------------|---------------------|--------------------|---------------|-----------|-----------|--------------------|
| Hemoglobin                           | 6 5 51             | 6 14 51             | 6 18 51            | 6 19 51       | 6 20 51   | 6 21 51   | 6 25 51            |
| RBC                                  | 12.3 grams (78.8%) | 15 grams (96.4%)    | 13.6 grams (87.1%) |               |           |           | 14.0 grams (89.6%) |
| WBC                                  | 4,000,000 cu. mm.  | 4,930,000 cu. mm.   | 4,130,000 cu. mm.  |               |           |           | 4,450,000          |
| Polys.                               | 13,000 cu. mm.     | 12,100 cu. mm.      | 10,500 cu. mm.     |               |           |           | 9,300              |
| Eosinophils                          | 60                 | 83                  | 77                 |               |           |           | 71                 |
| Lymphocytes                          | 8                  | 17                  | 20                 |               |           |           | 4                  |
| Monocytes                            | 28                 |                     | 3                  |               |           |           | 20                 |
| Blood sugar                          | 88 mg. %           |                     |                    |               |           |           | 5                  |
| NPN                                  | 39 mg. %           |                     |                    |               |           |           |                    |
| Stool (ova, parasites, occult blood) | Negative           |                     |                    |               |           |           |                    |
| Total eosinophils count              | 77 cu. mm.         | 71 cu. mm.          | 1,310 cu. mm. ?    |               | 4 cu. mm. | 0 cu. mm. | Negative           |
| Urinalysis routine                   | Negative           | Positive 6.5 gms. % | Normal             |               |           |           |                    |
| Porphyryns                           |                    |                     |                    | 1.1 mg. %     |           |           |                    |
| Serum proteins                       |                    |                     |                    | 20% (45 min.) |           |           |                    |
| Spinal fluid                         |                    |                     |                    | Negative      |           |           |                    |
| Serumbilirubin                       |                    |                     |                    |               |           |           |                    |
| Bromsulphalein dye retention         |                    |                     |                    |               |           |           |                    |
| Cephalin flocculation                |                    |                     |                    |               |           |           |                    |

TABLE II

|                                |        |        |         |         |
|--------------------------------|--------|--------|---------|---------|
| Urinalysis porphyrins*         | 6 4 51 | 6 8 51 | 6 15 51 | 6 25 51 |
| Coproporphyrins (mcg. per day) | 607    | 410    | 1492    | 1007    |
| Uroporphyrins (mcg. per day)   | 2094   | 3567   | 664     | 5056    |
| Porphobilinogen                | +      | +      | +       | +       |

\*Courtesy Dr. Cecil Watson

of hospitalization was from June 4 to June 26.<sup>†</sup> Pertinent data at this time were as follows: B. P. 150/80; EKG normal except for an inverted T3. G. I. series revealed coarsening of the rugal folds and mild hypertropic gastritis. Laboratory data are summarized in Table I.

Symptoms on admission included lumbar backache and mild burning in the epigastrium. During the night of June 8 it was noted that he was quite restless and he awoke at 3:00 A. M. with severe palpitation, sweating, tachycardia, acute backache, and "churning" of the stomach, one of his worst spells. He was exhausted the following morning, complained of severe chest pain, and stated that he felt "terrible" in general. On June 9 the burning and hurting in the epigastrium continued throughout the day, with a drenching sweat through the night. On June 11th there were a few spells of palpitation, and the same gastro-intestinal symptoms were noted. There were various muscle aches and mild blurring of vision. Symptoms continued, with such complaints as shaking, occasional spells of palpitation, a "let down" feeling, and "gas pressure." On June 15th he had an exceptionally bad day, with an exacerbation again of the above. He said he would have been unable to work if at home because of such extreme "shakiness." On June 20th he complained of radicular type pain radiating from the mid-dorsal region to the epigastrium and accompanied by severe burning. On June 25th, two days after the ACTH was stopped, he reported, "I caught hell yesterday," with "hurting and burning" in the epigastrium, gas pressure, girdle pain, etc. This gradually subsided. The clinical impression was that he was no better and perhaps somewhat worse during ACTH administration. This was confirmed by the quantitative determination of porphyrins in the urine. (Table II)

The patient continued to suffer through the summer and fall of 1951. Riboflavin administration had been resumed following dismissal from the hospital at his request but seemed to have no apparent effect on the course of the illness. There were a number of severe flare-ups during the fall, rendering him unable to work and confining him to bed at least half the time. However,

<sup>†</sup>ACTH was administered from June 5 to June 23, 1951, inclusive, in four daily doses at 6 hour intervals. Total dosage was 1565 mgms. (Figure 1)



## ACTH Dosage

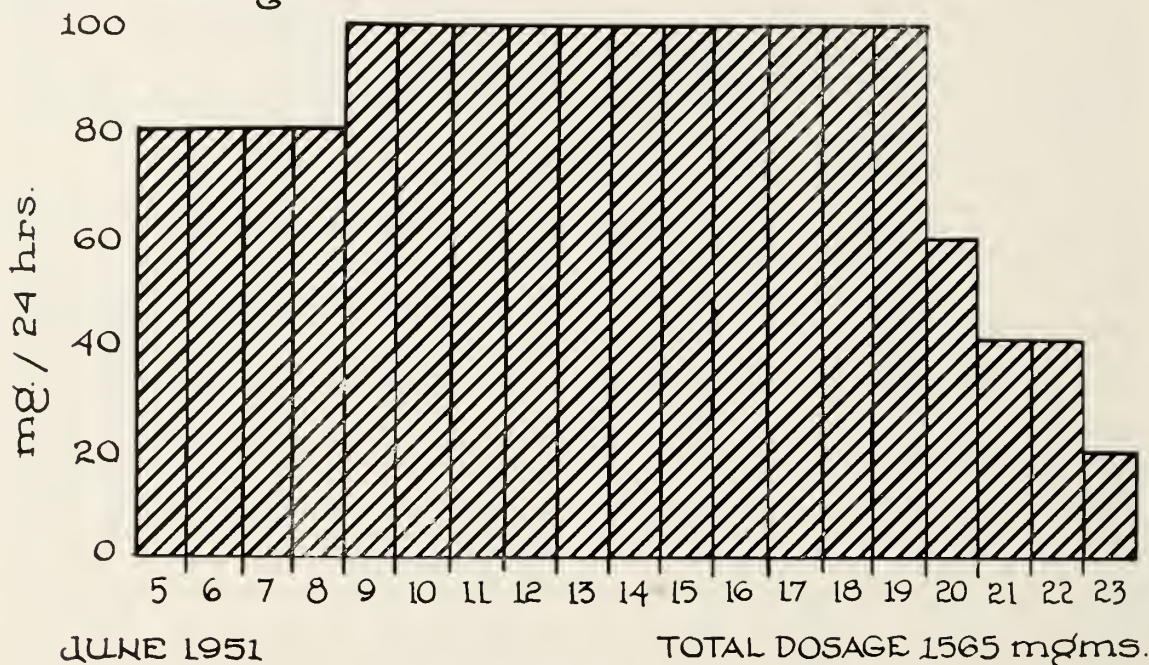


Figure 1

in November 1951, he began to improve, noting that his symptoms, although the same qualitatively, were less quantitatively and that he had less "hang-over" after the attacks. "I worked better in the past month than in a year." His only treatment during that time had been 3 Theragraan multivitamin capsules daily, plus 20 mgm. of riboflavin. He stated that he felt more "secure" while taking the latter. He was seen on January 3rd, 1952 when he stated there had been only one moderately severe attack since November 12, at which time he had generalized aching and mild fever for a day. This was accompanied by the same type pain in the chest and epigastrium, hips, knees, and low back. Examination was still essentially negative. When last seen in December 1952, he was better in general, though mild to moderately severe flare-ups occurred from time to time. He had continued his high vitamin intake.

## COMMENT

This case presents many of the characteristic clinical manifestations of porphyria, with involvement of various systems including nervous, musculoskeletal and gastrointestinal. Difficulties in diagnosis are again emphasized, especially when the condition is not considered in the differential diagnosis. It is obvious that neither ACTH nor riboflavin had any definite effect on porphyrin metabolism as measured by porphy-

rin excretion in the urine. While the patient felt subjectively better during certain periods of riboflavin administration, at other times his symptoms were not influenced. It is more than likely that the temporary remissions noted above were either spontaneous or possibly related to high intake of all vitamins and especially the B complex. Clinically the patient was actually worse while on ACTH.

## SUMMARY

A case of porphyria is presented in which ACTH and large doses of riboflavin were ineffective therapeutically.

The author is indebted to Dr. Cecil Watson for urinary porphyrin determinations on this patient.

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One of the values of a community-wide mass survey is the disclosure of localities or groups in which there is a high prevalence rate where screening efforts may be concentrated.—*Arthur C. Christie, M. D., J. A. M. A., January 10, 1953.*

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However accurately we carry out the health examination of the community, we cannot expect to achieve complete victory over infection until the public itself has become better informed. It sometimes happens that an infectious form of primary pulmonary tuberculosis runs such a rapid course that others have been infected long before the next scheduled examination. A flare-up of an older tuberculous infection may also occur rapidly. Such cases are, however, not common and the patient is brought to bed very soon.—*Tobias Gedde-Dahl, M. D., Am. J. Hyg., Sept. '52.*

## USE OF POLYETHYLENE TUBING FOR ABDOMINAL DRAINAGE IN CIRRHOSIS OF THE LIVER

WALKER REYNOLDS, JR., M. D.

Anniston, Alabama

There have been many methods described in the surgical treatment of ascites in cirrhosis of the liver. The method described here is applicable in late cases of cirrhosis, in which relief must be obtained by removing excessive ascitic fluid. The advantages of the particular method to be described are as follows: (1) the patient may be treated as an ambulatory patient and treated at home by periodic drainage; (2) decompression is carried out slowly, thus preventing circulatory collapse as seen in some cases following paracentesis in which there is rapid drainage of ascitic fluid; (3) the polyethylene tubing may be introduced into the peritoneal cavity through a needle, thus eliminating the necessity of an abdominal incision; (4) morale and economic factors are improved as the patient is able to spend his last remaining days at home without having to make periodic trips to the hospital to have his abdomen tapped; and (5) the polyethylene<sup>1</sup> tubing has very slight tissue reaction, thus decreasing the possibility of infection.

### METHOD

The patient, having had his bladder emptied, is placed in a semi-sitting position. The abdominal wall is then anesthetized, using a local anesthetic solution. The site for placing the polyethylene tube is selected at a point approximately five to six centimeters below the umbilicus in the midline. A regular 13-gauge or a 14-gauge thin wall needle is connected to a 5 cc. syringe and is slowly advanced through the abdominal wall until there is a return of the ascitic fluid. The syringe is removed and the polyethylene tubing is threaded through the needle until it is within the peritoneal cavity. The tubing selected is usually 6 feet in length and is .037 inches in diameter. It is advanced 2 to 3 inches into the peritoneal cavity. The needle is then withdrawn leaving the polyethylene tubing within the peritoneal cavity. The distal end of the tubing is taped to the mouth of a drainage bottle at the bedside. The end of the tubing should be visible so that the number of drops per minute may be

noted. There should be a rapid continuous dropping of ascitic fluid. The portion of the tube just proximal to its entrance into the abdominal wall is then secured to the skin with 4-0 black silk sutures. A loop of several inches of tubing is left free between the suture tie and the abdominal wall; this allows the tubing to be adjusted until the optimal position is obtained. Occasionally there will be a temporary stoppage of the flow of the fluid due to the obstruction caused by either omentum or intestines. This has never been a serious problem in the drainage of the ascitic fluid as the tubing may be readjusted and the fluid restarted. By using this method, the abdomen can be gradually decompressed, removing up to 7600 cc. of fluid within a 24-hour period.

### REPORT OF CASES

#### Case I

*First Hospitalization.* This 65-year old white man was first admitted to the hospital on 5/11/50 by his L. M. D. with complaint of pain in the right upper quadrant of the abdomen. Examination at that time revealed the following: (1) the liver was enlarged, hard, and nodular, and extended approximately 8 to 10 cm. below the costal margin; (2) there was no fluid wave present; and (3) laboratory studies were essentially negative. The patient was treated symptomatically and sent home on the sixth hospital day with a diagnosis of cirrhosis of the liver.

*Second Hospitalization.* The patient was again admitted, on 2/16/52, stating that he had had swelling in his abdomen for the past two years and had been tapped several times during that period. A past history of alcoholism was obtained. Examination revealed a markedly distended abdomen with a fluid wave present. There was moderate tenderness in the right upper quadrant. Following the method described, polyethylene tubing was inserted into the peritoneal cavity. Within the next eighteen hours, seven and one-half liters of fluid were removed. The patient was not completely decompressed but was comfortable. He was discharged on the sixth day.

*Third Hospitalization.* The patient returned on 3/4/52, being quite dyspneic, and

1. Usher, F. C.: Use of the Polyethylene Catheter for Jejunostomy Feeding, *Am. J. Surg.* 82: 408 (Sept.) 1951.



had marked abdominal distention. A polyethylene tube was introduced into the peritoneal cavity and the following amounts of ascitic fluid were removed: 3/4-700 cc., 3/5-7600 cc., 3/6-3200 cc.: Total—11,500 cc. On 3/7 the patient accidentally pulled out the tubing. At this time an abdominal paracentesis was done, using a trocar; approximately 5000 cc. of additional fluid were removed. The patient was discharged from the hospital on 3/8.

*Out Clinic Visit.* On 3/29 an abdominal paracentesis was performed using a trocar. Approximately twelve liters of fluid were removed. Upon reaching home the patient collapsed. He was put to bed, became irrational and increasingly weak, and was readmitted to the hospital on 4/2/52.

*Fourth Hospitalization.* The patient would not take feedings by mouth, hence was given intravenous fluids consisting of glucose, amino acids and Ringer's solution. He improved, becoming rational by the end of the first 24-hour period. He was then placed on a medical regimen<sup>2</sup> of high protein, high caloric, low salt diet, vitamins, choline and methionine. On 4/8 the patient became uncomfortable and dyspneic due to the increasing abdominal distention. A polyethylene tube was placed into the peritoneal cavity. The following amounts of fluid were removed: 4/8-6750 cc., 4/9-4500 cc., 4/10-750 cc., 4/11-1700 cc., 4/12-800 cc., 4/13-900 cc., 4/14-1200 cc., 4/15-600 cc., 4/16-750 cc., and 4/20-300 cc.: Total—18,250 cc. On 4/22 the tube was pulled out accidentally by an attendant. It was reinserted on 5/17. The following amounts of fluid were then removed: 5/17-4100 cc., 5/18-2900 cc., 5/20-1400 cc., 5/21-200 cc. and 5/23-200 cc.: Total—9050 cc. The tube was removed on 5/23/52. There was no evidence of infection about the polyethylene tubing at anytime during its use. The patient died on 5/24/52. A total of 38,800 cc. of fluid was removed through the polyethylene tube.

#### Comment

This case illustrates a comparison between the two methods of paracentesis: (1) rapid decompression using a trocar, and (2) slow decompression using polyethylene tubing. The patient collapsed following the removal of twelve liters of fluid using a trocar. He

had some weakness following the removal of the maximum amount of fluid in a 24-hour period—6700 cc.—using the slow decompression method; however, he showed no signs of circulatory collapse during this period.

#### Case II

*First Hospitalization.* This 50-year old white man was admitted to the hospital on 4/28/52 with a complaint of pain in the right upper quadrant of one day's duration. Physical examination at this time revealed slight tenderness in both lower quadrants and, to a lesser extent, in the right upper quadrant. There was no spasm present. The abdomen was moderately distended. Laboratory findings revealed the following: Red blood cell count—4,200,000; hemoglobin—12.6 grams; white blood cell count—4,800, with 78% polymorphonuclears. The serum amylase was 98 mg. per 100 cc.; icterus index was 30 units; urobilinogen was positive in the urine. The prothrombin time was 100% and the bleeding time was 2 minutes, 10 seconds.

On 4/29/52 the patient had increasing tenderness in the right upper quadrant, and a palpable mass was noted. On 4/30 the patient was taken to surgery where the following were found: 1. approximately 500 cc. of straw-colored fluid within the peritoneal cavity; 2. an atrophic nodular liver; 3. a distended gallbladder containing 75 cc. of bile and approximately 12 faceted, jet-black stones; 4. a moderately enlarged spleen with perisplenic adhesions; and 5. large veins in the omentum.

A cholecystectomy and a biopsy of the liver were done. The pathology report was as follows: (1) portal cirrhosis of the liver; (2) gallbladder—cholelithiasis and diverticulosis. The postoperative period was uncomplicated with the exception of leakage of ascitic fluid through the drainage site which closed spontaneously within the first few weeks. The patient was discharged from the hospital on 5/9/52. During the next two months the patient was drained twice as an outpatient.

*Second Hospitalization.* On 6/5/52 the patient was admitted with an unexplained fever. He was afebrile in three days and was discharged with no evidence of any infection.

*Third Hospitalization.* The patient was readmitted on 6/17/52, being quite dyspneic and having a markedly distended abdomen.

2. Portis, S. A., and Weinberg, S.: Recent Advances in the Medical Treatment of Cirrhosis of the Liver, J. A. M. A. 149: 1265 (August 2) 1952.

Physical examination at this time revealed a fluid wave in the abdomen and ankle edema. Polyethylene tube drainage was instituted. The total output per day was as follows: 6/18-950 cc., 6/19-3100 cc., and 6/20-2600 cc. The patient was discharged on 6/20/52 with the tubing in place and concealed within a dressing on his abdomen. During the remainder of his life, he was treated at home medically, using high protein, high caloric, low-salt diet; multivitamins; choline and methionine; and occasional diuretics. For the next month the patient's wife regulated the abdominal drainage according to the symptoms of the patient. When the patient felt dyspneic and distended, she would drain off approximately a liter of fluid. The patient was ambulatory part of the time and put to bed for drainage when he became uncomfortable. Most of the drainage was done while he was asleep at night. The dressing itself was inspected periodically and there was no inflammatory reaction noted about the tubing nor was there any sign of peritonitis at any time. The patient gradually declined and died, presumably from gastro-intestinal hemorrhage secondary to esophageal varices on 7/21/52. The following amounts of fluid were removed at home during the last month of his illness: 6/20-1000 cc., 6/21-1000 cc., 6/24-100 cc., 6/25-100 cc., 6/28-1000 cc., 7/1-1000 cc., 7/2-1000 cc., 7/5-1000 cc., 7/8-1200 cc., 7/9-1200 cc., 7/11-1000 cc., 7/13-1500 cc., 7/15-1000 cc., 7/16-2000 cc., 7/17-3000 cc., 7/18-1500 cc. and 7/19-1750 cc.: Total—22,650 cc.

#### Comment

This case best illustrates the advantage of polyethylene tube drainage. The patient had a polyethylene tube within his peritoneal cavity the last month of his life. His ascites was controlled by periodic drainage done by his wife. No readjustment of tube was necessary during this period.

The patient's morale was good; he did not have the worry or expense of hospitalization.

#### DISCUSSION

Despite vigorous medical measures, the ascitic fluid which accumulates in cirrhosis of the liver may require periodic mechanical removal. There have been various surgical procedures devised to remove this abnormal accumulation of fluid including the follow-

ing: a. paracentesis abdominis,<sup>3</sup> using a trocar; b. omentopexy;<sup>4</sup> c. anastomosis<sup>5</sup> of the saphenous vein to the peritoneum; d. portacaval<sup>6</sup> anastomosis; e. anastomosis of the left splenic and renal veins;<sup>7</sup> f. anastomosis<sup>8</sup> of renal pelvis to peritoneum; g. peritoneal button;<sup>5, 9</sup> h. hepatic artery<sup>10</sup> ligation; i. internal<sup>11</sup> fascial drainage; and j. enterectomy.<sup>12</sup>

The fact that there are many methods recommended further substantiates the fact that there is no ideal method. Each method has its own indications and its advocates. The method described here is used as a substitute for paracentesis with trocar. It has the following advantages: (1) it is a simpler surgical procedure; (2) fewer paracenteses are necessary; (3) decompression is done gradually, lessening the dangers of circulatory collapse as seen following rapid decompression; (4) the patient may be drained at home by a member of the family; (5) the danger of infection is minimal; and (6) the economic and morale factors are improved as this method requires less hospital treatment.

3. Romano, Samuel A.: Paracentesis Abdominis, *Am. J. Surg.* 50: 495 (December) 1940.

4. Otto, T. O.: Operation for Relief of Ascites in Hepatic Cirrhosis, *South. M. J.* 34: 401 (April) 1941.

5. Warren, K. W.: Ascites: Its Treatment, *S. Clin. North America* 28: 721 (June) 1948.

6. Blakemore, A. H., and Lord, J. W., Jr.: Technique of Using Vitallium Tubes in Establishing Portacaval Shunts for Portal Hypertension, *Am. J. Surg.* 122: 476-489 (October) 1945.

7. Linton, R. R.; Jones, C. M., and Volwiler, W.: Portal Hypertension: The Treatment of Splenectomy and Splenorenal Anastomosis with Preservation of the Kidney, *S. Clin. North America* 27: 1162 (October) 1947.

8. Ferguson, Charles: Ascites: An Operation for Its Relief, *West. J. Surg.* 56: 497 (September) 1948.

9. Davidson, C. L.: Abdominal Drainage in Cirrhosis by Use of Glass Button, *Am. J. Surg.* 84: 233-235 (August) 1952.

10. Chenoweth, A. I.: Early Results Following Therapeutic Ligation of the Hepatic Artery: Preliminary Report of Cases, *Ann. Surg.* 135: 756 (June) 1952.

11. Chatterji, K. K.: Preliminary Notes on Surgical Treatment of Ascites by Fascial (Internal) Drainage, *J. Indiana M. A.* 4: 105-09 (November) 1934.

12. Huergo, M.; Castellanos, W., and Nunez, A.: Enterectomy in the Treatment of Ascites Due to Cirrhosis, *Rev. de med. y cir. Habana* 47: 416 (September) 1942.



## SUMMARY

1. A simple method of paracentesis using a polyethylene tube has been described.
2. Two case histories of patients with late cirrhosis of the liver are cited.
3. The various surgical methods used in treating ascites are listed.
4. The advantages of this method are listed; a. simple surgical procedure; b. fewer paracenteses; c. gradual decompression; d. intermittent drainage at home; e. an ambulatory patient; f. minimal danger of infection; and g. improved morale and economic factors.

## ACKNOWLEDGEMENTS

Case I was a patient of Dr. B. F. Caffey.

Case II was a patient of Dr. Hunt Cleveland who supervised the medical treatment of the patient.

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**Gamma Globulin**—The National Foundation for Infantile Paralysis makes the following statement upon the recommendation of its Advisory Committees on Research and Education:

"The Office of Defense Mobilization has been designated the allocating authority for the nation's entire supply of gamma globulin. Inasmuch as this blood fraction is effective in preventing measles, infectious hepatitis and poliomyelitis, and because this substance is in very limited supply, allocation of the nation's stockpile through a central agency was decided upon as the most effective way to prevent the greatest number of cases of these diseases.

"We have just learned that the Office of Defense Mobilization has announced its plan for allocating gamma globulin for use against poliomyelitis. The basis for the plan as announced was recommended by a special panel appointed by the National Research Council, a quasi-governmental agency.

"We note with some concern that, in accordance with this plan, the greater part of the nation's stockpile of this scarce material may be used in a manner for which direct proof of efficacy is lacking. Reference is made here to the recommendation that gamma globulin be administered to household and other intimate contacts of patients suffering from poliomyelitis and, in certain circumstances, even to contacts of individuals suspected of having poliomyelitis.

"The field trials conducted during the summers of 1951 and 1952, with financial support of the National Foundation for Infantile Paralysis, demonstrated that gamma globulin, when administered during an epidemic of poliomyelitis to in-

dividuals in those age groups subject to greatest risk, provides some temporary protection against the paralytic form of this disease. Whether or not gamma globulin will be equally effective when used in some other manner is unknown. The field trials further provided suggestive evidence that those individuals who develop poliomyelitis following administration of gamma globulin develop a less severe form of the disease.

"While it is true that in a population group made up entirely of individuals who are contacts of persons with poliomyelitis, there develops subsequently an unusually large number of cases of this disease, it is also true that approximately 75 per cent of these 'secondary' cases occur within six days of the time the first case in the family has been diagnosed. Whether or not gamma globulin will prevent poliomyelitis when it is administered to contacts of diagnosed cases is unknown.

"We know that gamma globulin is not effective if administered to patients after signs of the disease are apparent. We also know that most, if not all, contacts of cases of poliomyelitis are already infected with the virus by the time the first case in the family has been diagnosed. In fact, there is good reason to believe that such individuals might have been infected for a period of several days. *IF* the blood fraction is to be administered to contacts of cases, the important and as yet unanswered question is 'Has the disease already advanced beyond the point where gamma globulin can prevent paralysis?' There is good reason to believe that there will be many contacts of cases of poliomyelitis who will become paralyzed even though they receive gamma globulin.

"The National Foundation's Advisory Committees on Research and Education have heretofore recommended and continue strongly to recommend that the major portion of the nation's stockpile of gamma globulin, available for use in poliomyelitis, be reserved for mass injections of children in the most severe polio epidemics of 1953. This recommendation is made because it is the only method so far proven to be effective against poliomyelitis. The Advisory Committees recommend further that the smaller portion of this scarce material be used in conjunction with contacts of diagnosed cases of poliomyelitis. It is hoped that, in connection with this latter use, adequate studies may be carried out so that we may learn whether or not gamma globulin employed in this manner can prevent paralytic poliomyelitis effectively."

The National Foundation stands ready to assist State Health Officers who may elect to employ community-wide injections of gamma globulin in an effort to halt an epidemic of poliomyelitis. It is prepared to provide specially trained personnel and such items of equipment as would not ordinarily be available in many communities.



#### 75-YEAR-OLD ALABAMA DOCTOR HONORED AT RICHMOND

At First Western Hemisphere Conference of the World Medical Association at Richmond, Va., April 21-25, are Dr. Frank L. Chenault (left), of Decatur, Alabama, 49 years of practice, and Dr. George R. Daniels, of Marion, Indiana, 53 years general practice, comparing notes on medical progress. These 75-year-old doctors, with 46 others, were designated by the Governors of their respective states as guests of honor. The theme of the conference was medicine's achievements in lengthening life and improving health.



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## DIURETIC EFFECTS OF MERCUHYDRIN (MERALLURIDE) ADMINISTERED BY SEVERAL ROUTES

"The relative efficacy of the mercurial diuretics by various modes of administration is a matter of considerable practical importance. On intravenous injection, these compounds sometimes produce serious reactions, and because the occasional fatal reaction is confined almost exclusively to this route of administration, there has been a tendency to turn to the intramuscular injection for routine treatment. The desirability of instructing patients in the technic of self-injection to avoid the need of a physician for each dose in the more intensive systems of treatment has focused attention on the subcutaneous injection as a technic that patients or members of the family may master with greater ease. There is lack of agreement concerning relative effectiveness by different routes."

Thus do Marsh<sup>1</sup> and his co-workers begin their consideration of this timely subject. The New York observers go on to tell us that "Observations on this point fail to carry conviction, however, because inadequate methods are used for ascertaining the facts. A method for the bioassay of diuretic agents in ambulant patients with congestive heart failure was recently described in detail by Greiner et al. Briefly, the plan provides for the use of Mercurhydrin by intramuscular injection as the standard against which other drugs or the same drug by different routes of administration is compared. The measure of response is the loss of body weight twenty-four hours after the dose. From dosage-response curves for the standard and the unknown, the effectiveness of the agent being tested is determined. This method of comparison meets the standard requirements for a bioassay."

Mercurhydrin was used because it could be given by all the routes of administration. Forty-nine patients participated in these assays, the ages ranging from thirty-nine to seventy-nine. And all of the common varieties of heart disease were represented. The investigators tell us, in conclusion, that "The results show that a dose of Mercurhydrin pro-

1. Marsh, Raymond; Greiner, Theodore; Gold, Harry; Mathes, Sydney; Palumbo, Frank; Warshaw, Leon, and Weaver, John: A Comparison of the Diuretic Effects of Mercurhydrin (Meralluride) Administered by Several Routes, New England J. Med. 247: 593 (Oct. 16) 1952.



JAMES ORVILLE MORGAN, M. D.  
President of the Association  
1953-1954



duces substantially the same amount of diuretic effect, when given by intravenous, intramuscular or subcutaneous injection.

"Mercuryhydrin is much less effective by the oral route than by injection; it takes approximately twenty-five times as much by oral administration as by intramuscular injection to produce the same effect, and the largest doses given by mouth in this study, which caused gastro-intestinal irritation in approximately a third of the patients, produced only a small diuretic effect, equal to that of less than 0.5 cc. of Mercuryhydrin by intramuscular injection.

"The results of this study fail to confirm the belief that ascorbic acid in the doses commonly used enhances the diuretic action of Mercuryhydrin or that ascorbic acid reduces gastro-intestinal irritation after oral doses of the mercurial."

It has now been something like a quarter of a century since the mercurial diuretics first came into use. And our knowledge concerning them is growing, albeit rather slowly at times. It is disappointing but not too surprising to realize that these preparations are less effective when given by mouth than when injected. Marsh and his co-workers have done well to investigate this subject and their report is interesting and provocative, even though limited to a small series of cases. However, there will probably be many practitioners who will doubt the advisability of having these drugs administered by needle by anyone except doctors or nurses.

#### **SOUTHERN PEDIATRIC SEMINAR**

The Southern Pediatric Seminar will hold its 33rd annual session this summer in

Saluda, North Carolina. Two weeks (July 20 through August 1) will be devoted to pediatrics and one week (August 3 through 8) will be devoted to obstetrics.

This is an institution of which doctors in the South have a right to be proud. It was founded by a southern doctor, it is owned and operated by southern doctors, and its faculty members consist of outstanding southern physicians. It has been deemed by many the best postgraduate course in pediatrics and obstetrics available in the country today.

The course consists of lectures, clinics, demonstrations, and clinical and pathological conferences. The members of the faculty are equally divided between physicians in teaching positions and physicians in active practice. Ample opportunity is given for discussions in small groups and for the answering of questions. Every effort is made to give the general practitioner the material and information which he needs in his every-day practice.

The course is fully accredited by the American Academy of General Practice.

One great feature of the Seminar is that it is held in the cooling atmosphere of the mountains of North Carolina and many physicians make the occasion a vacation as well as a time for learning, taking their wives and children with them. Provision is made for the housing of families.

Any general practitioner who is anxious to catch up on what is new in the field of pediatrics or obstetrics is urged to write for further information to Dr. D. L. Smith, Registrar, Saluda, North Carolina.

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## **THE ASSOCIATION FORUM**

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

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#### **WITH ALL DUE REGARD**

**W. A. Dozier, Jr.**

**Director of Public Relations**

The new administration, according to the morning newspaper and radio newscasts, is opposing the proposed constitutional amendment which would assure the American people that domestic legislation was not superseded by international treaty. The President has said that the proposal would deny

him the flexibility needed in foreign affairs. The Secretary of State has assured Congress that its members will be consulted. With all due regard, this is not enough. Perhaps checks and balances do hamper any administration, but they are necessary in a democracy like ours. There is too much at stake to take a chance.

The situation that might arise in regard to medicine has already been pointed out in

articles dealing with the I. L. O. The field of medicine is not the only one in danger. The following article is taken from *The Southern Lumberman* and illustrates the type of danger we can face, for an U. N. covenant or treaty can be ratified by Senate action.

"Very few sawmill operators and owners of timber-land feel that the United Nations has any effect on their business. Probably fewer still feel that they should be particularly concerned about the political opinions of the diplomatic representatives of Bolivia and Iran. Possibly there are some one-gal-lus peckerwood mill operators who have only a hazy idea as to just where these countries are, and would think it highly unlikely that their private property could be jeopardized by anything that might be done by an Iranian or a Bolivian. But that would be because they don't follow closely the proceedings of the United Nations.

"Just the other day, at a meeting of the U. N.'s Economic and Financial Committee, the representatives of Iran and Bolivia introduced a proposal providing that any nation has the right to nationalize any resource industry—which would include any lumber or forest products industry. Representatives of the United States proposed an amendment to the effect that owners of properties so seized should be paid for them; but this amendment was promptly rejected and after some debate the original proposal was adopted as introduced. Of the nations represented on the Economic and Financial Committee, 31 (including all the Iron Curtain countries) voted for the resolution; 19 (including Britain, France, China, Greece, Turkey and others) refrained from voting. The lone negative vote was cast by the United States. So, as a result of this action, it is the declared policy of the United Nations that it is all right for any country to seize any private resource industry, without remuneration to the owner.

"It does not appear to be immediately likely that any lumber company or any other resource industry in the United States is in any imminent danger of having its property in this country seized by the government. It is highly significant, however, that the United Nations should be on record, with only one dissenting vote, as favoring non-remunerated nationalization of industry. Such action will cause prudent business men to watch with concern the growth and in-

creasing power of the United Nations and its committees vested with far-flung power. It would be a tragic irony if, in our great effort to create a free world through the co-operation of all the nations, we should build up a powerful instrumentality which would deprive us of the very liberties we seek to preserve."

The only way one can be reasonably sure that "it can't happen here" is to take all precautions and erect all possible safeguards. And do so with all due regard.

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**Cancer of the Thyroid**—The method of management of carcinoma surgically is beginning to have more uniformity of opinion and standardization, and it has been a trend towards more radical procedures. The method of surgical management depends on the type of carcinoma. If the patient has a small nodule outside the thyroid gland which clinically is suspected of being malignant and of thyroid origin, the patient is draped both for thyroidectomy and for a radical neck dissection. Two sets of instruments are set up. The nodule is removed first, and the pathologist gives a report on the frozen section. If it is reported to be a lesion which resembles carcinoma of the thyroid, whether it is papillary or follicular in type, the instruments are changed, and a block dissection of the neck on that side is begun from below. When the thyroid gland is encountered, it is removed on that side totally for papillary and follicular type carcinomas. If it is an infiltration, the opposite lobe as well is removed totally, but the block dissection is done on one side of the neck only at this time. In addition to that, if a growth is of the papillary type and the operation is being done for so-called "lateral aberrant thyroid" where the isthmus is cut from the opposite lobe the surface must be carefully examined microscopically for any evidence of extension. If there is none, the remaining lobe may be left. Postoperative studies of this surface are important. I have had experience of being told in the operation room that the surface was clear of carcinoma and leaving a small part of the opposite lobe in when, five days later after study of the permanent section, the pathologist told us carcinoma involved it. A second operation was done to remove the entire remaining lobe. Parathyroid glands and recurrent laryngeal nerves must be carefully preserved during these operations.

Operations for diffuse infiltrating carcinomas of the thyroid gland demand total thyroidectomy, but without the hope of controlling the cancer in an appreciable number of the cases.

Postoperatively, radioactive iodine tracer studies and therapeutic doses should be given. It is to be remembered that a good many of these tumors are radiosensitive and x-ray irradiation will help.—*Mahorner, J. Louisiana M. Soc., March '53.*



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## TRANSACTIONS OF THE ASSOCIATION

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### 1953 SESSION

#### PART I

#### TRANSACTIONS OF THE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA HELD AT BIRMING- HAM, APRIL 16-18, 1953

##### First Day, Thursday, April 16

The Medical Association of the State of Alabama convened in annual session in the Terrace Ballroom of the Thomas Jefferson Hotel, Birmingham, and was called to order at 9:00 A. M. by the President, Dr. B. W. McNease of Fayette.

Invocation was given by Dr. Guy McGowan, Pastor of Highlands Methodist Church, Birmingham.

Address of welcome was delivered by Dr. Edgar G. Givhan, Jr., President of the Jefferson County Medical Society, host to the Association.

Reports of committees were called for by President McNease, each, in its turn, being referred to the State Board of Censors.

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#### COMMITTEE REPORTS

##### *Medical Service and Public Relations*

At the last annual session this Committee presented a program that it would follow during 1952-53. This program was approved by the Board of Censors and the Association, and the Committee has put it into effect with only those alterations necessitated by changing circumstances.

During the 1951 meeting of the Alabama State Legislature, the Alabama Chiropractic Association attempted to have the Medical Practice Act changed by calling for an autonomous board of examiners for chiropractic. Friends of the medical profession introduced a counter-proposal known as H890, which served its purpose in stopping the other bill. Neither proposal was passed. The Board of Censors then charged the Committee on Medical Service and Public Relations with the responsibilities of determining the wishes of the profession on this matter and of instituting measures to carry out these wishes. It was at this point that the above mentioned program was approved.

In an effort to carry information to the various County Medical Societies, it was determined that two meetings would be held in each of the four vice-presidential districts. During the summer these eight meetings were held. In each instance the Vice-President of the district called the meet-

ing and requested a designated group of County Medical Societies to send representatives. By splitting the districts it was possible to call the meeting at a point where no Society representative would have to travel too far to attend. At each of those meetings the program included remarks on the historical background of the problem, an explanation of what H890 contained, a discussion of the action plan being followed by the Committee, and a request that all information be taken back to the County Medical Society for discussion by the group and a decision relative to their desires. Later the Societies were requested to inform the Committee on how its members felt in the matter.

As more and more of these meetings were held and as reports began to come in, it became evident that the profession was not in favor of any measure which would weaken the present Medical Practice Act. Since there had been some discussion of a basic science law, the public relations office prepared one based on laws in those states which have such. This was done so that it would be ready for discussion in case it were decided that such an approach should be used. It was found, however, that the profession wanted to take its stand for the present law, as any change thus far considered would be a weakening of the present status and would, therefore, be detrimental to the health of the people of Alabama. At a meeting of the Board of Censors in October, the Committee was instructed to proceed on this stand. A letter was sent from the Board to all members stating that the dictates of the group were being followed.

At this point three basic problems faced the Committee. First, there was the necessity of organizing the Societies for concerted action and of instructing and motivating them to do their part of the job. It was decided that the best means of accomplishing this was to call a statewide conference. This was done on January 11. It was held in Montgomery, and sixty-eight people representing twenty-seven County Medical Societies and Woman's Auxiliaries were present. The discussion covered many ramifications of the whole problem of illegal practitioners and one action which grew out of this meeting was "Resolved, That it is the sense of this body that privilege licenses, state or city, to engage in a business or profession, requiring a state license, be not issued to any person who does not hold such a state permit or license." The Committee calls this resolution to your attention. The meeting was very successful and served as a firm basis for subsequent work which has been done.

The second problem facing the Committee was to tell the public of the stand being taken and of the reasons for such action. The Committee has prepared two short pamphlets for public consumption which, it is felt, make a good statement of the medical profession's position. The first of

these was "For Your Protection," which is a dignified explanation of the fact that there is such a thing as a Medical Practice Act, what it stands for, how it protects the people, and why the Act should not be weakened. The second is called "The Question Mark" and is more definitive in relation to the specific problem at hand. It uses the question and answer technique and asks and answers the following questions: What is chiropractic? Why is chiropractic an unsound theory? What diseases will chiropractors treat? What is the danger to you? What do the chiropractors want? Why does the Medical Association of the State of Alabama oppose a separate board or any weakening of the present law? Both of these pamphlets have been made available to the members of the profession for their use in informing the public. At this time some 70,000 of the first and some 40,000 of the second have been sent out. The Committee recommends that these be used even more extensively so that all the people may know of and understand the profession's stand.

The third problem facing the Committee was to inform the Legislators of the profession's beliefs and reasons for its actions. To accomplish this, a packet was prepared for each State Representative and Senator. This packet contained materials on chiropractic and the licensing of chiropractors and included "Science vs Chiropractic," a pamphlet by an outside source; a report to the New Jersey Legislature when it was considering the creation of an autonomous board; a report by medical educators to the New York Medical Society on the fallacies of chiropractic; excerpts from a Louisiana legal proceeding, and a copy of the two pamphlets prepared by the Committee on Medical Service and Public Relations. These packets were taken by the Public Relations Director to a physician in each County Medical Society, this physician having previously been selected as contact man. Thus the Legislators will see that "home folks" are interested in this problem and that it is not just a few isolated medical men who are participating.

The Committee plans to continue executing its program which was begun last year, as it will not be completed until this fall.

The Committee has felt that the Association needs to present proper medical information to the public in every possible way. Because of the present interest by the public in medical subjects and because of the popularity of radio, the Committee decided to consider this mass media to augment its efforts in its newspaper column, "Your Health." The Director was instructed to investigate the possibility of a series of programs to be made available to the County Societies for their use on local radio stations. Mr. Graydon Ausmus, Director of the Radio Department of the Extension Division of the University of Alabama, gave freely of his time and knowledge; and with his great assistance the series of programs has gone forward. There will be thirteen in the series covering the following subjects: Heart Disease, Cancer, Rheumatic Fever, The Physician Shortage and How a Community May Attract a Physician, Diabetes, Arthritis, Headache, Your

Life After 65, Mental Illness, Tuberculosis, Diets and Dieting, Childbirth Safety, and When to Use Antibiotics. Each program consists of a panel discussion between two Alabama physicians with the Director of Public Relations serving as moderator. Twelve of the thirteen programs have been taped, one of which was played for the Annual Session, and it is hoped that in the near future this series can be made available for use by the Societies. The Committee recommends these programs to you and urges that they be used in accordance with plans which will soon be sent to the Societies.

The matter of the present set up on dues within the Association was discussed by the Committee. It was pointed out that some six hundred members, almost all of whom are in active practice, do not pay dues because of the present thirty year ruling, whereby any physician who has been a member for thirty years or more is exempt from paying dues. Because of the ever expanding activities of the Association and even more because of the nature of these activities, the Committee feels that the thirty year ruling should be abolished and recommends to the State Board of Censors that every member in the active practice of medicine in the state of Alabama should pay the usual dues.

The Committee has also considered the matter of ascertaining what the public thinks of the profession. Although it is true that the Director of Public Relations can and does report some of these reactions, it is highly likely that in too many quarters he is known and considered to have vested interests. Because of this the Committee recommends to each succeeding President of the Association that he consider favorably the possibility of including a lay person on his annual program for the purpose of having this person report his and/or the public's feelings toward the profession. It is realized here that this person must be selected carefully, for many people are not willing to be as frank as this type speech would require.

The usual activities of the Public Relations Office have continued. They are well known and need no listing here. In addition to speaking and representing the Association at various functions, the Director has attended two meetings of the American Medical Association, a national rural health conference, a conference of the American Medical Education Foundation, and a conference on physician placement.

Ever since its inception, the Committee has operated on a fiscal year beginning on April 1 and continuing through March 31 of the following calendar year. This was done originally because there was no background experience to give any idea on expected funds or expected expenditures. This situation has now changed. The Treasurer's Office operates on a calendar year. To bring the two into accord, the expenditures listed below are for nine months, April through December, 1952; while the proposed budget covers the full 1953 calendar year. Following these is a statement of the surplus account.



|                         | Expenditures<br>4-1-52 to 12-31-52 |             | Proposed Budget<br>for 1953 |             |
|-------------------------|------------------------------------|-------------|-----------------------------|-------------|
| Salaries                |                                    |             |                             |             |
| Director                | \$4,950.00                         |             | \$ 6,600.00                 |             |
| Clerical Asst.          | 1,823.23                           | \$ 6,773.23 | 2,700.00                    | \$ 9,300.00 |
| Travel Expense          |                                    |             |                             |             |
| Committee               |                                    |             | 150.00                      |             |
| Director                | 1,665.00                           | 1,665.00    | 2,400.00                    | 2,550.00    |
| Printing                |                                    |             |                             |             |
| Health Column           | 185.40                             |             | 250.00                      |             |
| Lit. & Bulletins        |                                    | 185.40      | 1,250.00                    | 1,500.00    |
| Office Equipment        |                                    | 32.97       |                             | 100.00      |
| Office Rent             |                                    | 720.00      |                             | 960.00      |
| Stationery and Supplies |                                    | 798.72      |                             | 1,200.00    |
| Telephone and Telegraph |                                    | 215.52      |                             | 500.00      |
| Radio                   |                                    |             |                             | 750.00      |
| Postage                 |                                    | 995.08      |                             | 1,500.00    |
| Art                     |                                    |             |                             | 100.00      |
| Library                 |                                    | 39.40       |                             | 75.00       |
| Miscellaneous           |                                    | 169.94      |                             | 465.00      |
| Total                   |                                    | \$11,595.26 |                             | \$19,000.00 |

## SURPLUS ACCOUNT as of DECEMBER 31, 1952

|  | Yearly<br>Appropriation<br>and<br>Expenditures | Yearly<br>Surplus |
|--|--|-------------------|
| Original Grant   | \$ 5,000.00                                    |                   |
| Expenditures 4-1-47 to<br>12-31-47                                     | \$ 365.88                                      |                   |
| Expenditures 12-31-47 to<br>6-30-48                                    | 286.69   |                   |
| Expenditures 7-1-48 to<br>3-31-49                                      | 1,327.76                                       |                   |
| Expenditures 4-1-49 to<br>3-31-50                                      | 1,296.99                                       |                   |
| Expenditures 4-1-50 to<br>3-31-51                                      | 261.00   |                   |
| Expenditures 4-1-51 to<br>3-31-52                                      | 653.05   |                   |
| Expenditures 4-1-52 to<br>12-31-52                                     | 32.97  | \$ 4,224.34       |
| 1948 Appropriation   | 14,484.50                                      |                   |
| Expenditures less office equipment<br>7-1-48 to 3-31-49                | 8,541.22                                       | 5,943.28          |
| 1949 Appropriation   | 15,555.00                                      |                   |
| Expenditures less office equipment<br>4-1-49 to 3-31-50                | 14,782.24                                      | 772.76            |
| 1950 Appropriation   | 16,597.50                                      |                   |
| Expenditures less office equipment<br>4-1-50 to 3-31-51                | 13,383.31                                      | 3,214.19          |
| 1951 Appropriation   | 16,965.00                                      |                   |
| Expenditures less office equipment<br>and legal fees 4-1-51 to 3-31-52 | 14,702.19                                      |                   |
| Legal fees   | 3,000.00                                       | —737.19           |
| 1952 Appropriation   | 18,045.00                                      |                   |
| Expenditures less office equipment<br>4-1-52 to 12-31-52               | 11,562.29                                      | 6,482.71          |
|  |  | \$16,451.41       |

The Committee wishes to thank all those members who have been so instrumental in making the past year successful. It would be remiss not to mention the spirit with which all entered into the jobs to be done. At the same time, the Committee asks for continued interest and effort on your part. The profession is making headway in the field of public relations but there still remains much to be done.

J. O. Finney,  
Chairman  
J. G. Daves  
John Day Peake  
J. P. Chapman  
J. Paul Jones  
E. L. Gibson  
Joe H. Little

Francis M. Thigpen  
H. L. Holley  
H. G. Hodo, Jr.  
*Ex officio*  
B. W. McNease  
Douglas L. Cannon  
D. G. Gill

## Prevention of Blindness and Deafness

WHEREAS, In Jefferson County alone, the vision of 26 eyes has been lost in 1952-53 through the improper use of air rifles and BB guns, and undoubtedly many times this number of eyes have been lost throughout the state of Alabama during this time; and

WHEREAS, It is believed that legislation to regulate the sale and use of air guns, and its enforcement, will reduce or eliminate this needless loss of eyesight; therefore be it

*Resolved*, By the Committee on Blindness and Deafness that the following suggested ordinance be presented to the Board of Censors of the Association for its consideration:

## A SUGGESTED STATE AIR GUN LAW

"Statement of Purpose: To the end that knowledge of the proper and safe handling of firearms may be taught and encouraged among the youth of this State, while at the same time providing certain controls over the careless and irresponsible use of air guns, it is deemed advisable and necessary by the State that air guns be sold at retail within this State only by licensed dealers, that the sale or furnishing of such guns be prohibited to persons under 18 years of age, except in the relationship of parent to child or teacher to student, and that certain necessary restrictions be applied to the use of air guns within this State.

"Section 1. (1) The term "air gun" means any gun (rifle or pistol) by whatever name known which is designed to expel a projectile by action of compressed air or gas, or by the action of a spring or elastic, but does not mean a firearm; (2) The term "dealer" means any person engaged in the business of selling at retail or renting air guns or projectiles therefor; and the term "licensed dealer" means any such person licensed under the provisions of this Act, or any person regularly licensed to sell firearms; (3) The term "minor" means any person who has not attained the age of 18 years.

"Section 2. It shall be unlawful for any dealer, except a licensed dealer, to sell, lend, rent, or otherwise transfer any air gun or projectiles therefor.

"Section 3. It shall be unlawful for any licensed dealer to sell, lend, rent or otherwise transfer an air gun or projectiles therefor to any person the dealer knows, or has reasonable cause to believe, to be a minor.

"Section 4. It shall be unlawful for any person to give, sell, rent, lend or otherwise transfer any air gun or projectiles therefor to a minor except where the relationship of parent and child, guardian and ward, or adult instructor and pupil exists between such person and the minor.

"Section 5. (1) It shall be unlawful for any minor to carry any air gun on the streets, alleys, public roads or public lands of this State unless accompanied by an adult. (2) It shall be unlawful for any person to discharge any air gun from or across any street, sidewalk, alley, or public road of this State or on or across any public land except on a properly constructed target range.

"Section 6. (1) Any dealer, other than a dealer licensed to sell firearms, desiring a license to sell, lend, rent or otherwise transfer air guns or projectiles therefor shall make application to the official licensing board of this State who shall provide the necessary forms and shall prescribe by reasonable rules and regulations the information to be contained in such application. The applicant for such dealer's license shall pay a fee of \$5.00 per annum. (2) Upon payment of the fee, the official licensing board shall issue to such applicant a license to sell, lend, rent or otherwise transfer air guns or projectiles therefor, which license shall remain in force, subject to annual payment of the license fee, unless and until revoked in accordance with the provisions of this Act. Provided, that no license shall be issued to any applicant within two years after the revocation of a previous license. (3) Violation by a dealer of any of the provisions of this Act shall be sufficient cause for the revocation of a license issued hereunder, after written notice to the dealer by the official licensing board and an opportunity to be heard. The dealer shall have the privilege of being represented by counsel at such hearing. (4) Final conviction of a violation of any provision of this Act shall automatically revoke and terminate any license issued hereunder. Upon a finding and judgment by a trial court against any dealer that he has been guilty of a violation of any provision of this Act, the license of such dealer shall be automatically suspended pending the final disposition of any appeal from such finding and judgment.

"Section 7. Dealers who are licensed to sell firearms shall not be required to obtain the special license to sell air guns provided for by Section 6 but shall comply with all other provisions of this Act. The violation by a dealer of any of the provisions of this Act shall be sufficient cause for revocation of the dealer's license to sell firearms.

"Section 8. Any person violating any of the provisions of this Act or any rules and regulations promulgated hereunder, or who makes any statement in applying for the license provided for in this Act, knowing such statement to be false, or who falsely represents himself as being 18 years of age or over in order to purchase or otherwise obtain an air gun or projectiles therefor, shall be guilty of a misdemeanor and shall be punished by a fine of not more than \$1000 or by imprisonment for not more than 60 days, or both; and in addition, in case of a dealer, to the revocation or suspension of license provided for hereinabove.

"Section 9. This Act shall take effect upon its passage and approval; and all laws and parts of laws inconsistent herewith are hereby repealed."

If the Board of Censors and the Association give favorable consideration to this suggested legislation, it is recommended that its endorsement be brought to the attention of the Senators and Representatives of the state of Alabama.

Alston Callahan

Chairman

Karl Benkwith

Richard Grayson

## Maternal and Child Health

The major activity of your Committee has been concerned with the first comprehensive individual case investigation and case evaluation of each maternal death in Alabama during 1952. In this undertaking we have enjoyed the cooperation of many physicians, the State Department of Public Health, and the Alabama Hospital Association. A preliminary report is being presented to the Association at this annual session; a final and complete report will be completed and published later this year.

Preliminary findings warrant the following comments about 1952 Alabama maternity matters:

(1) Hemorrhage was the most frequent cause of maternal death.

(2) Most maternal deaths were preventable.

(3) Preventable errors which cost maternal lives were (a) professional errors of technique and/or judgment, (b) gross ignorance or indifference of patients themselves, (c) midwives, and (d) hospitals in the above order.

(4) Adequate antenatal care for indigents is still unavailable in many counties and in other counties is available only once a month.

(5) Because of obvious socio-economic reasons, Negro midwifery continues to be a "necessary evil" in many Alabama counties. More adequate regulation of, and better educational efforts for, these Negro midwives would appear to be about all we can hope for just now regarding this major problem.

(6) Cesarean section is still a none-too-safe operation here in Alabama.

(7) Pituitrin still causes uterine rupture; Pitocin for "labor inductions of convenience" may involve some needless risk.

(8) Criminal abortion remains the major cause of infection deaths.

All of us concerned with the 1952 survey feel that our efforts will be justified by the information obtained. Later this year we shall publish such information and we truly feel that some of the causes of maternal death in Alabama may be so indicated and perhaps corrected.

Gamma globulin is being widely publicized as prophylaxis against polio. Its use seems justified but its actual value has not been fully evaluated. Distribution and allocation to selected areas will be controlled by the State Health Department; the preparation will not be available through pharmaceutical firms or the Red Cross. Explanation of this allocation plan to your patients will help avoid confusion regarding availability of the preparation.

T. M. Boulware

Chairman

Hughes Kennedy

A. E. Thomas

## Mental Hygiene

The Mental Hygiene Committee wishes to call to the attention of the Association the following developments in the fields of psychiatry and mental hygiene during the past year:



(1) One year ago we asked the Association to support a revision of the Blue Cross-Blue Shield contract to provide for the care of mental and emotional illnesses. This revision has not been completed. We have the continued support of Mr. H. F. Singleton, Manager of the Blue Cross-Blue Shield. May we continue to have the support of the Association?

(2) We wish to express our appreciation to the Alabama Legislature for the interest that has been shown in our State hospital system. We are sure that these hospitals for the mentally ill will benefit, not only financially but by greater public support.

(3) There is under consideration by committees of this Legislature changes in the laws relating to the mentally ill, to provide for voluntary and emergency commitment to our mental hospitals. We support such additions to our laws.

(4) We would like to emphasize clearly that we do not support any changes in our laws that will insist upon an inquisition in which to charge and prove a case of mental illness against a patient.

(5) We wish to congratulate Miss Mary Belle Roberts, Chief Psychiatric Social Worker, Alabama Division of Mental Hygiene, on the way in which she has developed the State Mental Health Program during the past year. Clinics which were already established have been continued; educational projects, such as pastoral counseling, motion picture library, and education for responsible parenthood, have been strengthened. The child study program, an in-service training for teachers, has been introduced in Shelby and Cullman Counties. The Lauderdale County Mental Health Clinic has expanded and has become the Muscle Shoals Division of Mental Health, with services in Lauderdale and Colbert Counties. The Birmingham Clinic, a demonstration unit, was transferred to the Jefferson County Health Department. The Jefferson County Division of Mental Health, a full-time service, serves patients from the entire State. We recommend to this session of the Legislature that they favorably consider funds to continue these services to our State.

(6) We would particularly like to express our appreciation for the kindly and sincere interest shown by the Birmingham Young Men's Business Club regarding the problem of mental illness.

(7) We would also like to express our appreciation to the Alabama Association for Mental Health and to local societies in the Muscle Shoals area, Montgomery County, Jefferson County Social Hygiene and Mental Health Association, and to the Tuskegee Society.

(8) We recommend that consideration be given to the establishment of a State supported in-patient service for mental illness in the Birmingham Medical Center. Since approximately 1/3 of the State's population resides within Jefferson and adjacent counties, and more than 1/2 in the northern section, such an in-patient service would

greatly relieve the facilities at Bryce Hospital and other state hospitals.

Jack R. Jarvis,  
*Chairman*

Frank A. Kay  
J. S. Tarwater

#### *Physician-Druggist Relationships*

At the annual meeting of the Association in Montgomery in April 1952, your Committee, with a committee from the Alabama Pharmaceutical Association, set forth 11 points for your consideration. If the points have been read by physicians and pharmacists, I am sure there is better understanding between them. A suggestion was made in the report that a pharmacist be invited to address the Association, and a doctor be invited to address the Alabama Pharmaceutical Association at their annual meetings.

In June 1952 your Chairman was invited to address a district meeting of doctors and pharmacists which was held in Brewton. There were about 66 in attendance and also many wives. A delightful dinner was served at the Brewton Country Club. After the dinner, your Chairman read a paper on the origin of pharmacy and the relationship of doctors and the pharmacists that existed 2000 years ago. Their interdependence was stressed. The Hippocratic Oath was read and commented on. If the Hippocratic Oath is the doctor's rule and guide of life, this oath should be the rule and guide of the pharmacist. A lively discussion followed in which both doctors and pharmacists took part. Several of the wives participated in the discussion.

Your Chairman was invited to address the annual meeting of the Alabama Pharmaceutical Association in Auburn in 1952. On account of illness he was unable to do so.

A request by 13 doctors and pharmacists was made for a copy of the 1952 report. The report was promptly mailed.

I have talked to all the representatives of big pharmaceutical houses that have visited your Chairman's office in regard to the relationship between the doctor and the pharmacist. The report from these representatives is that the relationship is on high ethical grounds.

Your Chairman in his 1952 report made a request that a pharmacist be asked to make an address at the annual meeting of the State Medical Association. The Committee feels that the above request would be of great value to both professions.

The research work of the big pharmaceutical companies is of untold value to the doctor and to laymen. When the detail man takes time to come to your office, give a few minutes of your time, and listen attentively for he will give you valuable information.

W. M. Salter  
*Chairman*

B. Frank Jackson, Jr.  
R. E. Cloud

### *Anesthesiology*

Your Committee on Anesthesiology continues to feel that steady progress is being made in this specialty. Each year there is a definite increase over the preceding year in the number of physician-anesthetists who locate in Alabama. The most recent addition is a well trained physician-anesthetist to locate in Tuscaloosa. The welcome he received from the surgeons in that city has been gratifying. Two qualified anesthesiologists are planning to locate in Birmingham in July 1953.

The Committee reports that the residency program in Alabama remains satisfactory. The two institutions approved for this qualified training are the Lloyd Noland Hospital in Fairfield and the Medical College of Alabama in Birmingham. These institutions make part-time training available to any physician in the State.

Your Committee is pleased to report that the anesthesiologists in Alabama continue to play an important part in their local, state and national medical societies. Subjects presented during the past year at the different meetings by anesthesiologists were: 1. Cardiac Arrest, 2. Premedication for Anesthesia, 3. Regional Block Anesthesia, 4. Clinical Use of Analeptic Drugs, 5. Office Anesthesia for Dental Surgery, and 6. Survey of 2,300 Spinal Anesthesias.

Finally, the Committee is doing everything possible to attract full-time anesthesiologists to locate in our State.

Alfred Habeeb  
*Chairman*  
Alice McNeal  
W. P. May

### *Postgraduate Study*

The general plan of instruction was through postgraduate medical assemblies consisting of groups in various areas of the State.

Instruction was financed partially by individual assembly fees and by funds made available through the honoring of field vouchers by the State Department of Health.

Speakers and programs were arranged through cooperation of the Postgraduate Seminar Committee of the Medical College of Alabama. Subjects were chosen by the various assemblies rather than by the cooperating committees.

Twelve assembly meetings embracing twenty counties were held in three strategic areas. Subjects were presented by eighteen different members of the clinical faculty of the Medical College of Alabama. A discussion period followed the presentation of each subject. Twenty-two subjects were given as listed below. Attendance was good and enthusiasm gratifying.

#### BLACK BELT POSTGRADUATE SEMINAR SOCIETY (10 counties)

Dermatological: Pyogenic Infections; Heat; Fungus; Poison Ivy.

Gastro-Intestinal: Diarrheas; Seasonal G. I. Complaints; Food Poisonings.

Dystocia in Obstetrics.

Nutritional Anemias.

Office Gynecology.

Office Diabetes.

Poliomyelitis.

Thyroid from A Surgical Viewpoint.

Some Endocrine Problems of Childhood.

Office Surgery.

Regional Anesthesia Adapted to Office Procedure.

Office Procedures in Proctology.

#### CENTRAL ALABAMA POSTGRADUATE MEDICAL ASSEMBLY (5 counties)

The Physiology of the Gastro-Intestinal Tract.

Management of Common Diseases of the Gastro-Intestinal Tract.

#### MARION COUNTY MEDICAL ASSEMBLY (5 counties)

The Common Cold and Its Sequellae.

Infectious Diseases of the Lung: Diagnosis and Treatment.

Diagnosis and Treatment of Iron Deficiency Anemias.

Office Management of Diabetes.

The Third Stage of Labor and the First Few Hours Thereafter.

Rheumatoid Arthritis.

The Diagnosis and Treatment of Common Skin Diseases.

Office Proctology.

It is somewhat disappointing that assemblies were not organized in other sections of the State where physicians could take advantage of the opportunity available through this medium of keeping abreast of the progress being made in various branches of medicine. Postgraduate instruction of the type now being given is available to all physicians in the state of Alabama through the assembly system. Any county or group of counties that can guarantee at least fifteen physicians in attendance may have the advantage of this type of instruction by contacting Dr. James R. Garber, Chairman of the Postgraduate Seminar Committee of the Medical College of Alabama, who will arrange for the organization of assemblies and speakers on subjects chosen by the assembly. The committee sincerely hopes that more counties will take advantage of this opportunity.

#### RECOMMENDATIONS

The Committee recommends that the above type of instruction be continued throughout 1953-1954 and that the Department of Public Health make available the sum of \$1,500, as has been the custom, which may be supplemented by funds from the Association, not to exceed \$1,000, if expansion of the program justifies such expenditure.



## Financial Statement

|   |            |
|---|------------|
| Receipts by the Medical College of Alabama                              |            |
| 3-31-52 Balance on Hand .....   | \$ 414.25  |
| Fees from Medical Assemblies .....                                      | 290.00     |
| Total .....   | \$ 704.25  |
| Disbursements by the Medical College of Alabama                         |            |
| Secretarial services .....  | \$ 350.00  |
| Postage and telephone .....   | 3.60       |
| 3-31-53 Balance on Hand .....   | 350.65     |
| Total .....   | \$ 704.25  |
| Agency Funds Placed at Disposal of Committee through Field Vouchers by: |            |
| State Department of Health .....  | \$1,500.00 |
| Field Vouchers for:   |            |
| Honoraria and Travel .....  | \$1,140.00 |
| Unexpended .....  | 360.00     |
| Total .....   | \$1,500.00 |

The Committee desires to express its appreciative thanks to the participating lecturers, the chairman and members of the Postgraduate Seminar Committee of the Medical College of Alabama, and the various assembly groups for their interest and services; the State Health Officer, Dr. D. G. Gill, and the State Board of Censors for making available funds necessary for promoting the program.

Ralph McBurney  
Chairman

Alfred J. Treherne  
Albert S. Dix

*Cancer Control*

Cancer is still the second greatest cause of death in the state of Alabama and for that reason we will have to be diligent in trying to use all the methods available in controlling it.

## EDUCATION

One of our chief methods of decreasing the number of cancer deaths is by continued education. By this we mean education for physicians as well as education of the laity. The American Cancer Society is doing an excellent job in educating the public.

With our methods of treating cancer, if the diagnosis is established early enough and treatment is adequate, approximately 70,000 to 80,000 additional lives can be saved each year. This one phase of education is fully worth the effort of all of us as physicians working along with lay organizations, particularly The American Cancer Society.

Our State Medical Journal has one edition each year devoted to cancer and various cancer problems. There are usually four to six excellent articles covering the various phases of the disease, and if one will refer to the cancer edition for the past three to five years, one will find the general field of the common varieties of cancer have been

well covered; particular emphasis is placed on early diagnosis and early and adequate treatment.

The Alabama Department of Public Health sends the Cancer Bulletin to all doctors throughout the State. This Bulletin is edited by some of the outstanding physicians in America and the leading articles in this bulletin are well worth all of our reading. Emphasis has been given through the Bulletin to Papanicolaou smears, a very simple procedure and can be done in most anyone's office. Emphasis has been placed on early diagnosis of cancer of the lungs.

There was one leading article emphasizing the importance of simple palpation in diagnosing early cancer, for example, palpating lesions within the oral cavity, tongue, and buccal surface. Simple rectal examination will diagnose approximately fifty-four per cent of the cancers of the large bowel. Palpation of the prostate will detect carcinoma in a fair number of patients. Probably the most important is that of palpation of the breast, axilla and supraclavicular regions for carcinoma originating in the breast.

By adding simple inspection to palpation and by taking a simple history on a patient, a large number of early carcinomas can be diagnosed in most any doctor's office without any special training. The first doctor seeing the patient is by far the most important cog in the entire management of cancer, as again early diagnosis and prompt and adequate treatment are probably our greatest weapons against cancer.

There have been no great advances in the treatment of cancer within the past year. Our only reliable methods for treating cancer are early diagnosis and prompt and adequate treatment, which includes surgery, radium and x-ray, and probably some of the isotopes in isolated cases. The hormones are certainly a great weapon for palliation, particularly for carcinoma of the prostate, and carcinoma of the breast with skeletal metastasis. Nitrogen mustard in lymphomas, particularly in Hodgkin's disease and lymphosarcomas, in conjunction with x-ray, is a very worth-while palliative procedure.

## CLINICS

There are five State-aid clinics operating in Alabama: University Tumor Clinic, Jefferson-Hillman Hospital; Mobile Tumor Clinic, City Hospital; Norwood Tumor Clinic, Birmingham; Oak Park Tumor Clinic, Hubbard's Hospital, Montgomery; and St. Margaret's Tumor Clinic, St. Margaret's Hospital, Montgomery. Through these five clinics 1,045 new patients were treated in 1952. According to age the majority of these fell between 35 and 70. There were 7 patients from birth to 14 years of age; there were 82 above 75 years of age. Sixty-eight had carcinoma of the buccal cavity and pharynx, 113 had carcinoma of the digestive organs and peritoneum, 36 had carcinoma of the respiratory tract, including the nose, nasal sinuses, larynx, trachea and lungs. Patients with breast and genital organ cancers numbered 517. Of this number 141 were carcinoma of the breast, 256 of the cervix, and 46 of the uterus. The remainder were mostly carcinoma of the penis, prostate, testicle, ovary, vulva and vagina.

There were only 24 urological carcinomas, the greatest number being of the bladder. Carcinoma of the skin is not usually treated through our State-aid clinics as the majority of these are minor and we feel can be treated as private patients rather than seeking State aid. Some complicated skin lesions, 223, were treated through the tumor clinics. Occasionally a neurological tumor is treated, although they are not accepted usually. There were ten malignancies of the bone. Leukemias are not usually treated through the State program. There were 14 cases with primary sites undetermined.

We realize that the State cannot treat all cancers that are found, nor can it treat all worthwhile cancer patients, but from this report one can see that an effort is being made to treat the indigent cancer patients in the State who have a reasonable chance of cure.

Besides these 1,045 new cancer patients, old patients are followed through the clinics for five or more years. Some of the patients have been coming since the clinics were started.

There is no setup in the State program to give home care to patients after they leave the clinic. It is only through the cooperation of the referring family physician that patients can have proper care after they have been seen through the clinic. This is particularly true in some of the rural areas where we do not have sufficient nurses to visit these patients.

A number of patients are referred to tumor clinics without proper information and often are real diagnostic problems rather than tumor problems. For example, patients are sent in for a general physical survey which is not feasible with our present clinic setup. These patients should be reasonably well screened and carcinoma strongly suspected before subjecting the patients to a trip to a distant clinic and the State to the expense of having the patient report. It is only through the cooperation of the referring physician that this can be done as the Health Department in Montgomery does not have access to these patients and has to go entirely on the information forwarded it by the referring physician; and, in turn, these patients are sent to the various clinics with this information. Often the patients are quite disappointed when they report to the clinic and are told there is nothing the clinic can do for them as it is purely a cancer clinic and general medical conditions are not treated. This sometimes causes a little ill will.

#### RESEARCH

As stated previously, nothing has been found in the past year that greatly alters our present treatment of carcinoma and it is only through constant research that we can hope to improve our present methods of treatment.

We are very fortunate in Alabama in having so much research activity. Southern Research Institute in Birmingham under the leadership of Dr. Howard H. Skipper is most active in investigating numerous phases of cancer and cancer therapy, particularly the various drugs. The Cancer Research Department, Medical College of Alabama, has collected thousands of human blood

samples for cancer tests. Alabama Polytechnic Institute has an active research program. Some research is being done at Tuskegee, as well as in various institutions, particularly the State institutions.

The majority of this research is being sponsored and financially aided by the American Cancer Society, particularly the Alabama Division. The Tumor Registry in Birmingham is sponsored by the American Cancer Society and is available for use by all the doctors throughout the State.

#### AMERICAN CANCER SOCIETY

We are most fortunate in having Mrs. Lillian G. Meade as Executive Director of the American Cancer Society, Alabama Division. Mrs. Meade is known by most of the doctors in the State as most willing and cooperative in trying to handle any of the tumor problems that come under the American Cancer Society.

The American Cancer Society is primarily an organization for education, not only of the laity, but also grants are given for research, scholarships and other worth-while ways of disseminating information regarding cancer.

In 1954, under the sponsorship of the American Cancer Society and with the approval of the State Medical and Dental Associations, there will be a most instructive and worth-while symposium held in Birmingham. There will be more details and publicity given this later, and it would probably be worth-while to keep this date available. As in the past, these symposiums sponsored by the American Cancer Society have been instructive. Outstanding speakers on cancer are gotten from all over the United States and brought into Birmingham for several days' intensive study on the various phases of cancer.

The American Cancer Society has a considerable amount of literature available to physicians wishing to make talks before medical societies and lay groups. This information can be obtained through Mrs. Lillian Meade's office in Birmingham or through the National office in New York. There are also numerous films available, not only for education of the laity but for professional education.

By this time all physicians in Alabama should have received a copy of *Cancer Can Be Cured*. This is a story of cancer in Alabama. It is written so the general public can understand our present information in regard to cancer, what can be done for our present cancer patients, and what research is being done, particularly in Alabama. Again emphasis is placed on research, education and service.

Through the State-aid clinics of Alabama there is no way to furnish transportation for charity patients. This can be done through the American Cancer Society. Dressings and drugs for relief of pain can be obtained through the Society. These three major phases of service are offered by the Society to supplement the State cancer program.

Mrs. Meade, in her detailed report, will give an outline of what the American Cancer Society is doing. The reason we are mentioning it is to



emphasize the close relationship between the work being done by the State Tumor Clinics and the Alabama Division of the American Cancer Society. There is no financial connection but the two groups work very closely together trying to coordinate the cancer program as near as possible.

#### RECOMMENDATION

We strongly urge that the educational program as carried on by the State Health Department be continued and supplemented by the local medical societies in every way that is possible. A continuation of The Cancer Bulletin as well as the continuation of the cancer edition of the Medical Journal is recommended.

It is probably time to think about a manual on cancer. Several years ago a manual was mailed to all practicing physicians in Alabama and this was a most worth-while reference book. There are a number of states that have these manuals. Probably we could do well to look some of them over and use one prepared by some other state; or have a committee prepare our own manual and mail it to all practicing physicians.

We strongly urge physicians who send patients to State-aid tumor clinics to screen these patients as carefully as possible before sending them. Terminal cases should not be sent to the tumor clinics, neither should simple skin cancers or diagnostic problems that are not cancer. Only cases that are reasonably sure of a cancer diagnosis should be subjected to the trip and expense of going through the tumor clinic.

We hope that there will be sufficient money soon to extend the service of the tumor clinics to include treatment of lymphomas, leukemias, lung cancer, and probably a number of the complicated skin cancers.

There should be a closer correlation between the tumor clinic patient after leaving the clinic and returning to his family physician. We hope this can be covered by the public health nurses.

More thought will have to be given to the terminal cancer patients, particularly those with illness extending over a long period of time. Probably some type of nursing care should be considered.

There are a number of cured cancer patients in Alabama and we would like to recommend that a cured cancer club be organized in order to boost the morale of some of the less fortunate patients undergoing treatment. There is a considerable amount of pessimism, and rightfully, among patients with a diagnosis of cancer, but if we can have a good showing of cured cancer, it would certainly help in taking care of individual patients being currently treated. There are a number of cured breast cancers, gynecological cancers, particularly uterine and cervical cancers, skin cancers, laryngeal cancers, kidney and colon cancers. Skin cancers, in a large percentage of cases, are very amenable to cures.

At the time of the symposium in Birmingham in the spring of 1954 we should have a joint meeting of those interested in the cancer program in Alabama: members from the Board of Health,

State-aid cancer clinics, Cancer Committee of the State Medical Association, representatives from the American Cancer Society, Alabama Division, and representation from the Welfare Department and other interested groups. This meeting should be a general discussion to see what can be correlated between these various groups that will help the general cause of cancer in Alabama.

#### RECOGNITION

Since our last report we have been most fortunate in having Dr. William G. Paul assigned to the Division of Cancer Control. Dr. Paul is devoting a considerable amount of his time to the cancer program and is giving considerable assistance to the various clinics over the State. Drs. Gill, Cannon and Smith are always cooperative in our various cancer problems.

Again we wish to express our appreciation to the American Cancer Society, particularly under the leadership of Mrs. Lillian G. Meade, for its continued cooperation in helping with our cancer problem. Workers in the State-aid tumor clinics have done an excellent job.

John Day Peake  
*Chairman*

J. P. Chapman  
F. H. Craddock, Jr.  
W. N. Jones

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#### REPORT, ALABAMA DIVISION AMERICAN CANCER SOCIETY MRS. LILLIAN G. MEADE STATE COMMANDER

As Executive Director of the American Cancer Society, Alabama Division, I am pleased to present this report to the Cancer Committee of the Medical Association of Alabama, and to the Medical Association as a whole.

Because April is cancer control month, so designated by a special Act of Congress, the general public will, of course, hear much more about the problem of cancer now than at any other time during the year. But I would like to emphasize the fact that the educational program of the American Cancer Society in Alabama is on a twelve month basis. Its three-point program of research, service and education is a much needed one.

The Cancer Society in Alabama is set up first of all with a county commander in each county, whose job it is to supply literature, show films, make talks to civic groups, when requested, and in general assist in making the people of that county cancer conscious.

Radio transcriptions, spot announcements, newspaper articles and mats are furnished from the State office to all newspapers and radio stations in the State at regular intervals. The cooperation of these two groups has been outstanding.

It is difficult to analyze the amount of good the educational program has accomplished, but if we save one life during a year through our educational program, all of the efforts of our volunteers will not have been in vain, and we have tangible evidence that we have done much more than this.

The film, *Breast Self-Examination*, has been viewed by thousands of women again this year, and it is our plan to continue to show this film at every opportunity afforded us. A new film entitled, *The Warning Shadow*, which is directed particularly to men, has just been made available also. This will be circulated throughout the State during the coming year. The growing interest of men on the subject of cancer control has been very evident. Many other educational films are in constant use.

The Alabama Division is very proud of its new brochure entitled *The Story of Cancer in Alabama*, a copy of which has been sent to each physician in the State, as well as to thousands of other individuals. Additional copies are available upon request. This brochure was written primarily for the lay public to acquaint it with the work of the American Cancer Society in Alabama.

To date, a total of \$457,417.00 has been spent on cancer research in Alabama alone. The beneficiaries are:

Alabama Polytechnic Institute, Auburn.

Alabama Association of Pathologists, Birmingham, (For the Tumor Registry).

Medical College of Alabama, Cancer Research Laboratory, Birmingham.

Southern Research Institute, Birmingham.

Tuskegee Institute, Tuskegee.

The Alabama Division places great emphasis on research with the hope that some day we may find one of the answers to the problem of cancer.

While the actual treatment of medically indigent cancer patients is designated by State law in Alabama to be under the supervision of the State Health Department, the problem of transportation of these patients, the furnishing of bandages and dressings, and medicine for palliative treatment (when requested by a local physician) is a part of the service program adopted by the Cancer Society. We have also done such things as purchase crutches for an amputee, paid for x-ray treatment to a victim of Hodgkin's disease, and additional x-ray and radium treatment for patients turned down by the State Health Department.

The Cancer Society would like to call your attention to the fact that, while we are paying bills for medicine for palliative treatment, request for this aid must be made by the patient's own physician, and the bills signed by the doctor giving the prescription before payment is made directly to the local pharmacy.

The demands for aid from the American Cancer Society are increasing daily, and we will expand our program just as far as our funds will allow. However, research and education will continue to be our primary aims.

During April we have set a goal of \$170,000.00, to be raised in Alabama, and we respectfully request a contribution from each physician. Arrangements for obtaining funds have been set up in each county.

During the past year the Executive Director has traveled over twenty thousand (20,000) miles,

has attended hundreds of meetings, representing the American Cancer Society, making talks to men's and women's groups over the State. In addition to this, of course, many talks have been given by the physicians of the State, and the volunteers of the American Cancer Society.

The Cancer Society has available in its office, for the use of the doctors in Alabama, medical films on cancer that should prove helpful. They are available upon request, without charge to any doctor in the State, and we hope that they will be used by the County Medical Societies during the year.

Tentative plans have been made to have a Cancer Seminar January 27th and 28th, 1954, in Birmingham. This will be a cooperative venture by the State Medical Association, the Jefferson County Medical Society, the Birmingham District Dental Society, the Medical College of Alabama, and the American Cancer Society, Alabama Division.

Committees of physicians have been set up by Dr. James Underwood, who is Chairman of the Jefferson County Advisory Committee, and plans are being made at the present time for this Seminar. It is planned to bring in outstanding men in different fields to discuss the different problems of cancer control. Emphasis is to be placed on early diagnosis and treatment.

It is hoped that many physicians will be in attendance at this meeting, not only from Alabama but surrounding states.

The Alabama Division of the American Cancer Society is proud of the fact that it has worked under the supervision of the Cancer Committee of the State Medical Association, and is also cognizant of its responsibility in this field. The volunteer workers of the American Cancer Society are instructed to leave any discussion of medical problems to local physicians. Our job is education of the lay public, service to the cancer patient, and supplying funds for cancer research in addition.

It is the belief of the Executive Director that only through close cooperation with the Cancer Committee of the State Medical Association, the State Health Department, and the Cancer Society that a worth-while cancer control program can result for the state of Alabama.

The American Cancer Society pledges its continued cooperation with the physicians in this State.

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#### *Tuberculosis*

##### *"Slogan"*

##### *"Let's Finish the Job"*

Half a century ago, "The White Plague" led the mortality tables of the Nation as King of the Killers, with about 75,000 deaths annually. Today, tuberculosis has been relegated to seventh place in the national scale of the ten leading causes of death. The National Tuberculosis Association says 1,200,000 Americans have tuberculosis in an active or inactive stage. The national death rate today is 20 per 100,000 of population.



It is expected that "The White Plague" will attack approximately 115,000 new victims in 1953.

#### ALABAMA'S PROBLEM

Despite life-saving advances in measures to control and treat the disease, tuberculosis remains a grim problem of considerable magnitude for our medical profession and the lawmakers of our great state of Alabama.

Alabama's tuberculosis picture is rather confusing when one considers the figures in table 1. The table reveals a sharp drop in deaths attributable to tuberculosis from 792 in 1951 to 560 in 1952, with a corresponding drop in the mortality rates from 25.5 to 17.8. This represents a therapeutic paradox which is in evidence throughout the Nation. Dr. Schwartz of the Veterans Administration, speaking recently to the Alabama Trudeau Society in Montgomery, stated that the number of deaths among patients in the Veterans Administration Tuberculosis Hospitals had dropped from 39% to 18%. The therapeutic paradox of this is that combined therapy with chemo-antibiotic drugs (streptomycin-isoniazid-PAS) is prolonging the lives of tuberculosis patients and that many will die of the disease several years later. However, a great many will be saved from the disease, especially those who will be able to obtain definitive surgery such as thoracoplasty or excisional therapy. Drug therapy is assisting in the cure of many patients and, equally as important, is preparing great numbers for surgery which would have otherwise died. This therapeutic paradox is creating a greater need for sanatorium beds, longer periods of hospital treatment, and a tremendous demand for definitive surgical procedures.

In the Alabama mortality scale of the ten major causes of death, the disease advanced from 8th place in 1948 to 6th place in 1949 where it remained until 1952 when it again returned to 8th place (table I).

Table 1  
THE TEN MAJOR CAUSES OF DEATH

| Cause                      | 1952  |       | 1951  |       | 1946-1950 |        |
|----------------------------|-------|-------|-------|-------|-----------|--------|
|                            | No.   | Rate* | No.   | Rate* | No.       | Rate*  |
| 1. Diseases of heart       | 8,135 | 259.3 | 8,164 | 263.1 | 6,692     | 221.4  |
| 2. Vascular lesions        | 3,304 | 105.3 | 3,303 | 106.4 | 2,745     | 90.8   |
| 3. Malignant neoplasms     | 2,983 | 95.1  | 2,767 | 89.2  | 2,652     | 87.7   |
| 4. Accidents               | 1,946 | 62.0  | 1,962 | 63.2  | 1,855     | 61.4   |
| 5. Pneumonia               | 935   | 29.8  | 1,085 | 35.0  | 1,100     | 36.4   |
| 6. Nephritis and nephrosis | 719   | 22.9  | 726   | 23.4  | 1,481     | 49.0   |
| 7. Immaturity              | 637   | 7.8** | 781   | 9.4** | 914       | 11.1** |
| 8. Tuberculosis            | 560   | 17.8  | 792   | 25.5  | 992       | 32.8   |
| 9. Diseases of arteries    | 448   | 14.3  | 359   | 11.6  | 295       | 9.8    |
| 10. Homicide               | 399   | 12.7  | 374   | 12.0  | 447       | 14.8   |

\*Rate per 100,000 population.

\*\*Rate per 1,000 live births.

Heart disease, vascular lesions, nephritis and immaturity not comparable to five-year average, due to change in coding procedure.

#### "ALABAMA'S CLOUD OVER THE HORIZON"

I. 11,555 Alabamians have pulmonary tuberculosis.

Rapid progress has been made in saving lives from tuberculosis but slower progress is being

made in saving people from the disease itself. The staggering case load reveals the darker side of the picture. In 1942 there were 6,157 known cases in Alabama as compared with 10,252 in 1951 and 11,555 as of December 31, 1952; thus representing a twelve hundred increase over the previous year. More significant than the number of cases is the fact that at least one third of these cases have constantly, or at times, positive sputums. With only 708 in sanatoriums, where they have the best chance of recovery, there is, undoubtedly, a great deal of "disease spreading" going on in the remainder of the group.

II. 560 Alabamians succumbed, needlessly, to the disease in 1952. This represents a therapeutic paradox as many will die several years later because of the life prolonging effect of chemo-antibiotic drugs.

III. Tuberculosis occupies 8th place in the mortality scale of the ten major causes of death in Alabama.

IV. The disease is still the major cause of death in the age group 15-34 years and kills more than all other communicable disease combined.

V. Lack of modern curative surgical facilities.

Months and even years of careful treatment, with collapse and combination drug therapy, preparing patients for curative surgery, are spent only to find that a very few are able to obtain it when needed. They pass the optimum time for surgery and go on to die of the disease, needlessly. Immediate steps must be taken to provide this sorely needed service.

It is because of the above facts that the tuberculosis specialist stands with down-cast head before the people of our great state of Alabama. His hands are tied because the State has not appropriated sufficient monies to enable him to render the modern treatment of tuberculosis as it is known today.

#### DIVISION OF TUBERCULOSIS CONTROL ALABAMA STATE BOARD OF HEALTH

Tuberculosis control activities of the State Diagnostic Clinics were further curtailed during 1952 because of a decrease in funds appropriated for that division. The results of the curtailment are reflected in an analysis of table 2 in which only 142,246 people were x-rayed with corresponding drop in the number of new cases discovered to 948.

Table 2

Ratio of New Cases of Tuberculosis to Number of Individuals X-Rayed by Year 1947-1952.

| Year | No. X-Rayed | No. New Tuberculosis Cases |
|------|-------------|----------------------------|
| 1947 | 72,736      | 3,051                      |
| 1948 | 199,244     | 2,773                      |
| 1949 | 212,751     | 2,624                      |
| 1950 | 396,100     | 3,092                      |
| 1951 | 230,162     | 2,661                      |
| 1952 | 142,246     | 948                        |

Consultation service in the interpretation of x-ray films sent in by private physicians for diagnosis also revealed a corresponding decrease. (See table 3.)

Table 3

| Year | Consultations |
|------|---------------|
| 1948 | 333           |
| 1949 | 594           |
| 1950 | 492           |
| 1951 | 408           |
| 1952 | 354           |

Activities of this division are being curtailed because of gradually decreasing Federal funds allocated for this purpose. (See table 4.)

Table 4

| Federal Funds Allocated for State Tuberculosis Control |              |
|--|--------------|
| 1948   | \$152,000.00 |
| 1949   | 150,362.00   |
| 1950   | 148,404.00   |
| 1951   | 144,406.00   |
| 1952   | 135,000.00   |

STATE SUBSIDY PLAN

The State subsidy situation improved considerably but was far below the amount promised by the Legislature of \$2.00 per patient day. If one uses as a yardstick the number of patient days for 1951 as a basis, the figure would be 236,-421 X \$2.00 per diem equals \$472,842.00, and only \$450,000.00 was appropriated. Using the 1952 patient days figure of 252,006 X 2 equals \$504,012.00 (See table 5.) Actually the appropriation was short \$54,012.00, which is no small amount. The net results of the deficient appropriation was a reduction from the promised amount of \$2.00 per patient day to \$1.85. This would be small change to the Educational Department or the Road Department but when you are already operating the tuberculosis institutions on thin air it becomes a crippling reduction which must be remedied in the near future.

Table 5

State Subsidy for Tuberculosis Patients

| Year | Per Diem | Patient Days | Hospital Beds | State Appropriation |
|------|----------|--------------|---------------|---------------------|
| 1947 | \$1.00   | 200,632      | 668           | 185,000             |
| 1948 | \$1.50   | 217,621      | 674           | 300,000             |
| 1949 | \$1.30   | 211,430      | 674           | 300,000             |
| 1950 | \$1.30   | 226,548      | 708           | 300,000             |
| 1951 | \$1.50   | 236,421      | 708           | 300,000             |
| 1952 | \$2.00   | 252,006      | ?             | 450,000             |
| 1953 | \$1.86?  | ?            | ?             | 450,000             |

RECOMMENDATIONS

1. Alabama's State Government should accept its proper responsibility to protect its citizens from this public enemy—tuberculosis.

2. Alabama should accept the fact that its citizens with tuberculosis are worth treating, curing

and restoring to health and economic productivity. Its citizens are worth treating with accepted facilities developed by modern medical science—not just in isolated institutions for economy.

3. Alabama's program for tuberculosis hospitalization for the next two years ought to be based on reasonable plans and estimates for the future—not on past inadequacies. According to the national yardstick, 560 deaths X 2.5 rate equals 1,400 beds. This is the minimum number of beds that we need to hospitalize the tuberculous ill patients of the State adequately.

4. That the state of Alabama take over the complete maintenance of its tuberculous ill people. The uneven pattern, which still exists, whereby patients in certain counties receive free treatment while those in others are unable to get any financial assistance and must remain untreated can only be solved by complete maintenance by the State. This fact is becoming more apparent daily and action is being taken at the present time by the legislative committee of the Alabama Tuberculosis Association. We urge, without reservation, that the State Medical Association support the work of this group vigorously.

Paul W. Auston  
*Chairman*

Industrial Medicine

I would like to express again my praise of the Industrial Health Council of Birmingham. I think it is doing more to further the cause of industrial medicine than any committee can possibly do and it certainly deserves the support of the medical profession. It is doing an excellent job teaching management of large and small businesses the value of industrial medicine. The employee is learning the value of early diagnosis and treatment. Through its posters and publications, it is a medium for sound health education. It promotes community health by early detection of communicable diseases. It is excellent public relations for the medical profession. I think its activities should be more widely known by the profession over the State. I talked to Mr. J. K. Williams, the Executive Secretary, some time ago about having an exhibition at the coming State meeting and he seemed to think it a good idea. I think it would be well to invite him to prepare an exhibit showing the results of some of their mass surveys. I wonder if it would help establish similar organizations in other industrial towns of Alabama if the State Board of Censors would approve this organization in principle. I have had conferences with Dr. Tinsley Harrison concerning the possibility of having some type of industrial medicine taught to the undergraduate students in our local medical school. He seemed enthusiastic and asked me to submit an outline of such a course which I have done. We have discussed the possibilities of giving every senior student an opportunity to see a local industrial medical set-up and visit one or more of the industrial plants. Dr. Harrison also suggested the possibility of having an elective course whereby a medical student could work with some industrial physician for one month of



the senior year. I am pleased to report that, as a consequence of these approaches, four hours of undergraduate lectures in industrial medicine will be given this year in the Medical College of Alabama. In addition, Dr. Denison has asked me to lecture for two hours on industrial medicine as a part of his public health program for senior students.

D. O. Wright  
*Chairman*

*Membership Extension*

1. WHEREAS, At the April meeting in 1952, the president of the Medical Association of the State of Alabama recommended that thought be given to extension of membership in the Association to all worthy and legally qualified physicians of the State; and

2. WHEREAS, The Association authorized the creation of a committee to study this matter, which committee was appointed by President McNease, the current president; and

3. WHEREAS, This committee has studied and given careful consideration to the various plans proposed by other states to extend the membership in their medical associations, and has concluded that none of these plans is applicable to the state of Alabama; and

4. WHEREAS, The present constitution of the Medical Association of the State of Alabama provides that graduates of reputable medical colleges who have been licensed to practice medicine in Alabama are eligible for consideration for membership in the constituent county societies, and that all members of such county societies holding charters from the Medical Association of the State of Alabama are ipso facto members of the Medical Association of the State of Alabama; therefore be it

1. *Resolved*, That it is the sense of the committee that the present constitutional provisions regarding membership in the Medical Association of the State of Alabama are sufficient; and be it further

2. *Resolved*, That it is the opinion of the committee that the responsibility for admission to membership in the Medical Association of the State of Alabama should continue to be vested in the county societies, and the committee recommends that the county societies make every effort to accept physicians as members on a basis of qualifications and merit.

T. Brannon Hubbard, Sr.  
*Chairman*

**REPORTS OF OFFICERS**

*Report of the Secretary-Treasurer*

Douglas L. Cannon

**MEMBERSHIP OF THE ASSOCIATION**

The membership of the Association, as enrolled April 1, 1953, is 1866, an increase of 64 in the number of a year ago. Of the state's 2050 physicians, the percentage of identification with the Association remains at 91.

**DEATHS**

Thirty seven (37) members of the profession have died since the report of 1952 was rendered. They were:

|                   |              |
|-------------------|--------------|
| Abernethy, W. L.  | Flomaton     |
| Blanton, Russell  | Birmingham   |
| Blue, J. Howard   | Bessemer     |
| Bristow, B. T.    | Bessemer     |
| Campbell, J. A.   | Dothan       |
| Cochran, W. W.    | Brilliant    |
| Coffey, G. W.     | Gadsden      |
| Cornelius, L. B.  | Cullman      |
| Douglass, John    | Birmingham   |
| Edwards, G. T.    | Selma        |
| Ferry, J. A.      | Birmingham   |
| Ford, C. E.       | Roanoke      |
| Godsey, W. M.     | Haleyville   |
| Gramling, A. B.   | Attalla      |
| Hall, K. R.       | Gadsden      |
| Hamrick, R. H.    | Birmingham   |
| Harrison, K. W.   | Enterprise   |
| Hill, R. S.       | Montgomery   |
| Hirsh, J. E.      | Birmingham   |
| Horn, S. W.       | Irondale     |
| Jackson, L. F.    | Panola       |
| Kilpatrick, G. C. | Mobile       |
| Krout, C. F.      | Brent        |
| Martin, J. C.     | Cullman      |
| Mason, F. H.      | Brewton      |
| Mason, J. M.      | Birmingham   |
| McKinnon, H. A.   | Birmingham   |
| Moody, E. F.      | Dothan       |
| Murphree, C. L.   | Birmingham   |
| Prescott, W. E.   | Birmingham   |
| Sanders, W. B.    | Troy         |
| Sigrest, O. R.    | Attalla      |
| Sowell, J. L.     | Jasper       |
| Stuart, W. W.     | Selma        |
| Thompson, J. A.   | Pine Apple   |
| Thorington, T. C. | Montgomery   |
| Whitehead, V. E.  | Blountsville |

Doctors R. S. Hill and J. M. Mason were Life Counsellors and Past Presidents of the Association. Dr. J. C. Martin was a Life Counsellor, and Dr. C. E. Ford, an Active Counsellor representing the 5th Congressional District.

**THE FIFTY YEAR CLUB**

This year Certificates of Distinction are to be awarded 23 physicians who have practiced their profession for 50 years and therefore become members of the Fifty Year Club. They will receive certificates tomorrow morning and are as follows:

|                      |            |
|----------------------|------------|
| Robert F. Ashworth   | Eclectic   |
| Frank Blanton        | Saragossa  |
| William T. Cocke     | Demopolis  |
| Miles A. Copeland    | Birmingham |
| James R. Dawson      | Uniontown  |
| George L. Faucett    | Gadsden    |
| Fletcher W. Gallaway | Florala    |
| Henry W. Gray        | Mobile     |
| Ira L. Johnston      | Samson     |
| Carney G. Laslie     | Montgomery |
| Earl F. Lee          | McKinley   |
| Bartlett J. Massey   | Enterprise |
| R. L. Milligan       | Montgomery |
| Samuel D. Motley     | Birmingham |

|                        |             |
|------------------------|-------------|
| William M. Pierce..... | Tuscumbia   |
| John R. Pow .....      | Woodward    |
| Thurlow W. Reed .....  | Brewton     |
| John T. Roberson ..... | Riverside   |
| George W. Salley ..... | Atmore      |
| Daniel H. Trice .....  | Boligee     |
| James A. Watson .....  | Springville |
| Marvin S. White .....  | Hamilton    |
| John W. Wilson .....   | Tuscaloosa  |

#### PRESIDENTIAL APPOINTMENTS

Key appointments made by the President will constitute a part of his message to you.

#### OTHER APPOINTMENTS

Legislation relating to the licensing and registration of practical nurses provides for an advisory council, one member of which is to be appointed by the State Board of Health and another by the State Medical Association, both appointments to be approved by the Governor. Dr. Robert Parker of Montgomery was approved as the representative of the Board, his term to expire September 4, 1954, and Dr. E. G. Moore of Tallassee as the representative of the Association, his term ending September 4, 1955.

In the report of the Board of Censors a year ago it was suggested that the Association, through its incoming President (Dr. McNease), contact the State Department of Education as to its willingness to allow more medical representation on the Advisory Committee for Practical Nurse Education. This was done, with the consequence that the number of such representation was increased to two, Dr. Luther Hill of Montgomery having been appointed by the State Superintendent of Education to serve with Dr. John A. Martin, also of Montgomery.

#### STATUS OF COUNSELLORS-ELECT

Last year, two members—Duncan P. Dixon and Landon Timberlake—were elected Counsellors. They have qualified as required by the Constitution of the Association and should be added to the Roll of Active Counsellors when the revision of the Rolls is made on Saturday morning.

#### OFFICERS TO BE ELECTED

Officers to be elected at this session are a President-Elect, a Vice-President for the Southwestern Division to succeed Dr. A. J. Treherne whose term has expired; and two Censors for five years to succeed Drs. French Craddock and John L. Branch whose terms expire.

There are to be elected, also, 18 Counsellors: From the 1st Congressional District, 2. J. D. Perdue is to be elevated to Life Counsellor; W. T. Cocke's second term of seven years has expired. Second District, 4. John A. Martin and L. D. Parker are to be elevated to Life Counsellors; the second term of seven years of N. W. Killingsworth and H. W. Waters, Sr., has expired. Third District, 2. Frank H. Boyd's second term of seven years has expired. Millard W. Samford's first term of seven years has expired. Fourth District, 1. Marcus Skinner's second term of seven years has expired. Fifth District, 2. C. E. Ford is deceased; J. O. Morgan's second term of seven years has expired. Sixth District, 1. T. J. Anderson

is to be elevated to Life Counsellor. Seventh District, 3. W. A. Gresham is to be elevated to Life Counsellor; the second term of seven years of Lewis C. Davis and R. Lee Hill (Haleyville) has expired. Ninth District, 3. John D. Sherrill's second term of seven years has expired; the first term of seven years of J. M. Donald and E. G. Givhan has expired.

#### APPOINTMENTS TO BE MADE

Committees presenting vacancies because of expiration of term of members are Medical Service and Public Relations (J. G. Daves and John Day Peake), Mental Hygiene (Frank A. Kay), Maternal and Child Health (A. E. Thomas), Cancer Control (Roger D. Baker, who has moved from the state), Prevention of Blindness and Deafness (Karl Benkwith), Postgraduate Study (Cabot Lull), Physician-Druggist Relations (B. Frank Jackson, Jr.), Anesthesiology (Alfred Habeeb), Tuberculosis (A. H. Russakoff), and Industrial Medicine (R. A. Hamrick).

It will be a responsibility of the next President to make appointments to fill these vacancies, and to name a delegate and an alternate to the American Medical Association to succeed Drs. J. Paul Jones and D. G. Gill, respectively, whose term will expire December 31, 1953.

#### ASSOCIATION FINANCE

According to custom, the accounts of the Association for the year 1952 have been audited by Crane, Jackson and Wilson, Certified Public Accountants, Montgomery, and the audit constitutes the concluding pages of this report.

The Officers and Members,  
The Medical Association of the State of Alabama,  
Montgomery, Alabama  
Gentlemen:

We have examined the cash accounts of the Treasurer of the Medical Association of the State of Alabama for the calendar year 1952, and have prepared the following statements:

*Exhibit "A":* Summary Statement of Cash Receipts and Disbursements for the Calendar Year 1952.

*Exhibit "B":* Statement of Cash Disbursements for the Calendar Year 1952.

*Exhibit "C":* Securities Owned at December 31, 1952.

Our examination included the tracing of all recorded cash receipts to the bank statements, and the vouching of all returned cancelled bank checks to the record of disbursements. Cancelled bank checks were also examined as to amount, proper signature and endorsement. Records of receipts and disbursements were proved for mathematical accuracy. Cash balances were independently confirmed with the depository.

Securities owned by the Association, detailed in Exhibit "C," were verified by physical examination, in company with Dr. Douglas L. Cannon, on January 28, 1953, at the Safety Deposit Vault of the First National Bank of Montgomery, Alabama.

Respectfully submitted,  
Crane, Jackson and Wilson,  
By H. C. Crane, C. P. A.



## Exhibit "A"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
SUMMARY STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 1952

*Cash Balance—January 1, 1952:*

|                                      |             |             |
|--------------------------------------|-------------|-------------|
| Checking Account—First National Bank | \$17,177.41 |             |
| Savings Account—First National Bank  | 1,477.76    | \$18,655.17 |

*Cash Receipts:*

## Association:

|   |             |             |
|---|-------------|-------------|
| County Dues   | \$23,189.50 |             |
| Counsellors   | 2,480.00    |             |
| Refunds for postage, telephone, etc., from the<br>Medical Service and Public Relations Com-<br>mittee | 640.88      |             |
| Sale of Association Rosters   | 52.00       |             |
| Interest on Savings Account   | 14.80       | \$26,377.18 |

## Journal:

|                                    |             |             |
|------------------------------------|-------------|-------------|
| Advertising                        | \$11,940.89 |             |
| Cooperative Medical Dividend       | 608.44      |             |
| Non-Member Subscriptions and Sales | 108.60      |             |
| Printing Expense                   | 20.00       | 12,677.93   |
| American Medical Association Dues  | 17,875.00   | \$56,930.11 |

*Cash Disbursements (Exhibit "B"):*

|  |             |           |
|--|-------------|-----------|
| Association                                    | \$ 5,793.36 |           |
| Medical Service and Public Relations Committee | 15,732.36   |           |
| Journal  | 12,105.48   |           |
| American Medical Association Dues              | 17,875.00   | 51,506.20 |

*Excess of Receipts Over Disbursements* ..... \$ 5,423.91

*Cash Balance—December 31, 1952:*

|                                      |             |             |
|--------------------------------------|-------------|-------------|
| Checking Account—First National Bank | \$22,586.52 |             |
| Savings Account—First National Bank  | 1,492.56    | \$24,079.08 |

## Exhibit "B"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
STATEMENT OF CASH DISBURSEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 1952

*Association:*

## Salaries:

|                   |           |           |
|-------------------|-----------|-----------|
| Douglas L. Cannon | \$ 600.00 |           |
| Clerical          | 25.00     | \$ 625.00 |

## Annual Meeting:

|                               |           |          |
|-------------------------------|-----------|----------|
| Guest Speakers                | \$ 850.00 |          |
| Convention Hall—Whitley Hotel | 300.00    |          |
| Printing and Mailing Programs | 230.91    |          |
| Badges                        | 150.72    |          |
| Movie Projection Service      | 41.20     | 1,572.83 |

Printing and Mailing Roster and Transactions ..... 1,229.40

## Expenses of Delegates to Meetings of American Medical

|                                     |        |  |
|-------------------------------------|--------|--|
| Association                         | 859.07 |  |
| Other Printing and Stationery Costs | 519.31 |  |
| Past President Buttons              | 372.26 |  |
| Remington Typewriter                | 137.50 |  |
| Postage                             | 129.21 |  |

## Reporting and Transcribing Proceedings in Behalf of

|   |        |             |
|---|--------|-------------|
| Dr. D. E. Jackson                                       | 124.20 |             |
| Clerical Services—Committee on Health Service Insurance | 100.00 |             |
| Audit Fee   | 60.00  |             |
| Guaranty Bond—Treasurer                                 | 50.00  |             |
| Rental of Safety Deposit Box                            | 6.00   |             |
| Lettering Fifty Year Club Certificates                  | 4.55   |             |
| Bank Exchange   | 4.03   | \$ 5,793.36 |

Medical Service and Public Relations Committee:

|  |             |             |
|--|-------------|-------------|
| Salaries:  |             |             |
| W. A. Dozier, Jr.                                      | \$ 6,600.00 |             |
| Assistants   | 2,423.33    | \$ 9,023.33 |
| Payroll Taxes  |             | 90.34       |
| Travel Expense—W. A. Dozier, Jr.                       |             | 2,265.00    |
| Postage and Postal Meter Rental                        |             | 1,539.72    |
| Printing and Stationery                                |             | 1,058.67    |
| Office Rental  |             | 960.00      |
| Telephone and Telegraph                                |             | 321.94      |
| Office Supplies and Expense                            |             | 255.32      |
| “Wamasa News”—Woman’s Auxiliary of Medical Association |             | 133.32      |
| Photographs  |             | 45.32       |
| Subscriptions  |             | 39.40       |
|  |             | 15,732.36   |

Journal:

|                                   |           |             |
|-----------------------------------|-----------|-------------|
| Salaries:                         |           |             |
| Douglas L. Cannon, M. D.          | \$ 600.00 |             |
| William W. Wilkerson, M. D.       | 300.00    |             |
| Lurette Kilpatrick                | 1,020.00  | \$ 1,920.00 |
| Printing and Mailing Journal      |           | 10,185.48   |
| American Medical Association Dues |           | 17,875.00   |
| Total Disbursements               |           | \$51,506.20 |

Exhibit “C”

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
SECURITIES OWNED  
DECEMBER 31, 1952

| Quantity | Description   | Date of Issue | Purchase Price | Redemption Value 12-31-52 | Increase    | Date of Maturity | Maturity Value |
|----------|---|---------------|----------------|---------------------------|-------------|------------------|----------------|
| 7        | \$500.00 Series “F” U. S. Government War Savings Bonds No. D191057F to No. D191063F   | 7-1-43        | \$ 2,590.00    | \$ 3,150.00               | \$ 560.00   | 7-1-55           | \$ 3,500.00    |
| 6        | \$500.00 Series “F” U. S. Government War Savings Bonds No. D220060F to No. D220065F   | 1-1-44        | 2,220.00       | 2,661.00                  | 441.00      | 1-1-56           | 3,000.00       |
| 4        | \$500.00 Series “F” U. S. Government War Savings Bonds No. D274010F to No. D274013F   | 6-1-44        | 1,480.00       | 1,774.00                  | 294.00      | 6-1-56           | 2,000.00       |
| 3        | \$500.00 Series “F” U. S. Government War Savings Bonds No. D385709F to No. D385711F   | 5-1-45        | 1,100.00       | 1,291.00                  | 181.00      | 5-1-57           | 1,500.00       |
| 11       | \$500.00 Series “F” U. S. Government War Savings Bonds No. D386331F; D386371F; D386367F to D386369F; D386373 F to D386-376F; D386378F to D386379F | 11-1-46       | 4,070.00       | 4,521.00                  | 451.00      | 11-1-58          | 5,500.00       |
| 3        | \$500.00 Series “F” U. S. Government War Savings Bonds No. D677782F to No. D677784F   | 5-1-49        | 1,110.00       | 1,150.00                  | 40.00       | 5-1-61           | 1,500.00       |
| 2        | \$1,000.00 Series “F” U. S. Government War Savings Bonds No. M1510584F and No. M1510585F  | 5-1-49        | 1,480.00       | 1,534.00                  | 54.00       | 5-1-61           | 2,000.00       |
| 1        | \$10,000.00 Series “F” U. S. Government War Savings Bond No. X355045F   | 5-1-49        | 7,400.00       | 7,670.00                  | 270.00      | 5-1-61           | 10,000.00      |
|          |   |               | \$21,460.00    | \$23,751.00               | \$ 2,291.00 |                  | \$29,000.00    |



*Committee of Publication*

Douglas L. Cannon, Chairman

The opening paragraph of this report must be a tribute to William W. Wilkerson of Montgomery who was a contributing editor to the Journal of this Association almost from the time of its inception until his death on February 12, 1953. At his passing, two editorials he had written for the Journal were found among his papers. It is likely they will be given posthumous publication in order that none of his work will pass unnoticed. William wrote because he read, and he read in order that he might write.

Of the Journal itself it may be said that its monthly circulation on December 31, 1952 was 2,025 copies, of which 1789 went to members of the Association, 95 to exchanges, 68 to advertisers and advertising agents, and the remainder to non-member subscribers.

Financially, the publication fared very well in 1952. Advertising and miscellaneous Journal receipts totaled \$12,677.93. Cost of printing and distributing the Journal was \$12,105.48, thus receipts exceeded disbursements by \$572.45, a much more wholesome situation than was predicted in the report of a year ago.

Transactions of the 1952 meeting were also furnished the members of the Association, and the cost of this item was \$1177.73.

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*Report Of Vice-President Treherne*

Southwestern Division

Three years ago, at the meeting of the Association in Birmingham, I was elected Vice-President of the Southwestern Division to complete the term of office of Doctor W. R. Carter who, because of illness, was unable to continue to serve. I am happy to report that Doctor Carter's health has now improved and it is my hope that he will yet serve the State Medical Association as Vice-President of the Southwestern Division. I recommend that Doctor Carter be reelected to this office for the next four (4) years.

During the past year the Division has been more active than usual. Most of our activity has been in the fight against chiropractors. In addition to usual meetings, many county societies have held special meetings concerning this most important problem.

Two district meetings concerning H890 were held, one in Monroeville and one in Demopolis. Doctor Cannon, Bill Dozier and I were present at both meetings. In addition to these, a very special meeting was held by the Mobile County Medical Society for the purpose of discussing the bill. Doctor Cannon, Doctor Paul Jones, Bill Dozier and I attended. A very heated and instructive discussion was presented. I am sure that the results of this meeting, and the recommendations offered, were quite interesting to the State Association and most valuable to the State Board of Censors. I am grateful to the members of the Mobile County Medical Society for the new ideas and information I obtained as a result of my attending this meeting. Of course, we all know

the results and final decision in handling H890. I feel that the Mobile County Medical Society is largely responsible for leading us in the proper management and handling of this most important bill.

One scientific meeting was held in the Division during the past year. This was in Demopolis on October 30th, and about sixty (60) doctors and their wives attended. Following the scientific meeting, a cocktail hour and a delicious barbecue supper was enjoyed by all. The entire program was excellent and the Marengo County Medical Society and its Woman's Auxiliary are to be commended for this most interesting and enjoyable program.

In closing this report, and my term of office, I wish to express my thanks to the Association for its confidence in me. I promise that I will always be interested in the Association and will be willing and anxious to assist it in any way possible. I would like also to thank the members of the Division who have been so interested and helpful to me during my term of office.

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*Report of Vice-President Finney*

Northeastern Division

A highly successful Division meeting was held at the Russel Erskine Hotel, in Huntsville, October 8, 1952. The members of the Madison County Medical Society were hosts and the Vice-President wishes to take this opportunity to thank each member for a most enjoyable and profitable meeting.

The scientific program was excellent. A wide range of interests was covered by the various speakers. Guest speakers were Dr. H. W. Scott, Jr., Head of the Department of Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee, and Dr. Richard Bing, Professor of Experimental Medicine, Medical College of Alabama, Birmingham, Alabama. They discussed the medical and surgical aspects of congenital heart disease. After the scientific program the members of the Division joined the members of the Auxiliary for dinner.

During the year, meetings were held at Gunter'sville and Talladega for discussion of the problem of revision of the Medical Practice Act. Representatives from a majority of the counties comprising the Division attended one or both of the meetings.

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*Report of Vice-President Windham*

Southeastern Division

Medical practice in the Southeastern Division has progressed smoothly and satisfactorily during the past year. In a former report, 1951-52, it was pointed out that the mortality rate in Alabama was below the national average and I am sure that this satisfactory figure has been maintained during this year. Our Division continues to attract young and well trained physicians, and as the influx continues we will be able to supply in a most satisfactory manner all of the medical services required by the population. Plans are

being formulated for increased hospital facilities through the Hill-Burton Hospital Construction Act. At least three hospitals and one health center are under consideration for the Division. With the present facilities, this will bring to a near saturation point hospital facilities in this area.

During the past year the Division held one divisional meeting. This was in Andalusia on March 19th, 1953. We were the guests of the Covington County Medical Society and the program and entertainment were superb. The meeting was well attended. The Auxiliary held a meeting at the same time and this was also constructive and well attended.

In our Division, divisional medical meetings are hard to schedule because of the small number of county societies large enough to entertain such a meeting. It also seems that some of the larger societies have no interest in playing host to the meeting. It was my intention to recommend, as has been done by other Vice-Presidents, that the constitution be revised and that Section 4, Article 22 as pertains to the districts and duties of the vice-president should be deleted. Modern medicine demands so much from doctors in the way of attending meetings that local meetings tend to lose their popularity and effectiveness. I should like, however, to report that the meeting place for the Division for '53 and '54 has already been secured and plans are now in progress for that meeting.

At the State meeting last year the question arose as to the advisability of taking in as members colored physicians in the State. The attitude in the Southeastern Division has been sampled and it seems that opinion is about equally divided as to whether or not this would be an accepted change from our present methods. The attitude can be simply stated as follows:

We feel that it would be satisfactory and desirable for them to attend the professional programs of State and local organizations but that they continue to be distinct and separate so far as the social phase of the Association is concerned. It is my personal opinion that they should be admitted to the society and that they should be encouraged to attend meetings where they can gain professional information. There are in the State sufficient members to organize a social program of their own which could be held in conjunction with the State Association. South Carolina and other states have formulated such arrangements and, as far as I know, they are working satisfactorily.

I therefore recommend two things for action by the State Association this year, namely: (1) revision of the constitution to delete from the duties of the vice-president the prescribed holding of district meetings. These can be held at his discretion. (2) Let the Association take in as members, in a professional status only, colored physicians in the State.

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*Report of Vice-President Payne*  
Northwestern Division

Since this is my first time to appear before you since my election to the office of Vice-President of the Northwestern Division, I would like to

take this opportunity to thank you for the honor which you have given me. I have been somewhat negligent in visitation of county societies. I am sure that each of you will agree that the average doctor with an active practice has very little time for routine travel. I have, however, held several business meetings and attended others at the request of the President or other officers of the Association.

On May 23, 1952 our President, Dr. McNease, and the Director of Public Relations, Mr. Dozier, met with me in Jasper to arrange for meetings in the district to discuss changes in the Medical Practice Act. These meetings were held on June 25, 1952 for the northern part of the district at Russellville and on July 2, 1952 for the southern part of the district at Tuscaloosa. The recommendations of the State Board of Censors for changes in the Medical Practice Act were presented by members of the Board or other officers of the Association. A lively discussion was held at each meeting.

On September 3, 1952, I attended an Executive Board meeting of the State Medical Auxiliary in Gadsden. Following the business meeting, I made a short talk on the acute nursing shortage.

A scientific meeting was held in Decatur on October 15, 1952 with the Morgan County Society acting as host. The District Auxiliary meeting was held at the same time. An excellent program was presented by members of our own district. Among those appearing on the program was Dr. J. J. Durrett, Dean of the Medical College of Alabama, who discussed the shortage of nurses. Dr. McNease, Dr. Cannon, and Bill Dozier, also attended the meeting. Following the program, a very enjoyable social hour and an excellent dinner were enjoyed by the members, visitors, and wives. We are grateful to the Morgan County Society for being our host for this very good meeting.

On October 16, 1952, I attended a public relations meeting in Birmingham. This meeting was called by the President at the request of Dr. Frank Wilson, Director of the Washington Office of the American Medical Association. The various functions of the Washington office were explained by Dr. Wilson and his staff. After attending such a meeting, I believe any of you would agree that our American Medical Association dues are being spent wisely and doing a good job for our profession.

I attended the scientific meeting of the Southwestern Division at Demopolis on October 30, 1952. Vice-President Treherne had a very outstanding program, and the Marengo County Society was a very gracious host. My wife and I enjoyed it very much.

And now I would like to make several recommendations. Since the Board of Censors has decided against sponsoring legislation which would change the Medical Practice Act, each of us should do our utmost to see that there are no changes made in the legislative act. We should go further and exert every effort to see that the provisions of this act are enforced.

During the days of World War II when gasoline was rationed and travel was difficult it be-



came customary for most of the Vice-Presidents to have only one scientific meeting each year. This custom has continued to a large extent. Since these meetings are usually held in the fall and our Association meeting is held in April, I would like to see Section 4 of the Duties of the Vice-President changed to read, "The Vice-President shall hold each year one meeting of the Medical Societies comprising his district." I believe this would encourage better attendance and help in arranging better programs.

I believe, and think most of you will agree, that the number one medical problem in Alabama today is not the shortage of doctors or hospital beds, as scarce as they both are, but the shortage of good nurses. It is my opinion the Nursing Association has been responsible in a large measure for this shortage. Requirements of both the students and hospitals have been raised to such an extent that in many instances they can not be met. I have had occasion to work with nurses trained in both large and small hospitals and some of the best nurses I have ever worked with were trained in the so-called small hospitals which do not have training schools now because they are not able to meet requirements of the State Board of Nurse Examiners. It is my opinion that a large number of girls would enter training in these hospitals who could not or would not leave home for the big hospital in the big city. These hospitals could train good nurses for good nursing care. Most of these nurses would be taking orders from and nursing patients of the same doctors who helped train them in the classroom and on the halls of the hospital. After all, it's bedside nurses that we need most of all. Nothing would prevent these same nurses from going to the larger hospitals or medical centers if she desired special or postgraduate training. I think representatives from the medical and nursing professions should sit down around the conference table and work out a solution whereby more nurses are trained to give better nursing care to our patients.

And, finally, I think it is my duty to make some comments about the medical program of the United Mine Workers of America since most of the program takes place in our district. Most of us are aware of the large sum of money which this fund has spent since beginning operation. We all agree, I am sure, that a great deal of medical and hospital care has been provided and many of the recipients would not have been able to afford it themselves and could not have gotten it any other way. But during the past few months there has developed an increasing amount of discontent and friction between the participating physicians and hospitals, the U. M. W. A. Area Medical Office, and at times between the participating physicians and the recipients of the medical care. An increasing number of our members are agreeing to work for the fund on a salary or retainer basis and it has been reported that pressure has at times been exerted to force others to accept this basis. It seems to me we should all understand one another, and here again I think the conference table is the best place for this to take place. I would like to recommend that the Board of Censors have a meeting with representatives

of the county societies in which the fund operates, and representatives of the fund. I believe a better understanding of all would result.

And, in conclusion, I would like to say I have enjoyed serving as one of your Vice-Presidents this past year. I would like to thank each of you who has helped to make it enjoyable.

#### *Message of the President*

It is generally accepted by all of the doctors of Alabama as great news when we learn that Birmingham is our next meeting place. Under normal conditions we are privileged to have our annual meeting in Birmingham every third year as guests of the Jefferson County Medical Society. I am confident that with the passage of time and with more and more of the physicians of the State being graduates of the Medical College of Alabama these return visits every third year will become increasingly pleasurable and stimulating.

To have been the first President-Elect of the Medical Association of the State of Alabama during the year 1951-52, and for the past twelve months to hold the highest office in this great Association is an honor to be coveted, a privilege to be enjoyed, and an experience filled with memories long to be cherished. For the privilege of serving you in these capacities the past two years I am deeply grateful, and it is with a deep sense of humility and pride that I appear before you to express my appreciation for these honors.

It is no easy task for a busy doctor to serve as President of the State Medical Association. There is so much that could be done and it would seem that, in a majority of instances, on occasions when one can least afford to spare the time. Your President has done his humble best and it is my sincere hope that I have measured up satisfactorily to your expectations.

During the past few years we have passed through a period in which the Medical Profession was put on the defensive; a period in which programs of health insurance were initiated and efforts made to furnish good medical care to all our people at a cost which they would be able to pay and at the same time retain freedom of choice of physician.

Now that we have a change in government and policies, it is not at all impossible that many of us may feel that there is no need for continuing to protect our freedom and at the same time to give our people the very best in medical service that can be obtained and at a cost which each one will be able to pay.

Likely many of us have the idea that we can relax, sit back and take it easy. That, I do not believe. As was so aptly stated in a letter from Dr. George Lull, Secretary of the American Medical Association recently, we are never going back to the "good old days." The Cadillac and airplane have replaced the horse and buggy and the thinking and demands of our people have not remained behind but have kept pace with the more recent methods of transportation. The Medical Profession must not wait for others to do its job. It must lead the way.

In the opinion of the leaders of American Medicine there are certain things that must be done in order that we may preserve our American system of medicine. These are: (1) Work with rural communities to establish facilities for physicians so that we shall have a better distribution of physicians; (2) See that good medical care for the indigent is available; (3) Extend public health coverage to areas lacking it; (4) Develop plans for the care of the chronic invalid; (5) Expand our voluntary insurance program not only to cover more persons but to cover those over the age of sixty-five years and those suffering from illness of long duration; (6) Clean our own house by disciplining those physicians who are tarnishing the reputation of the whole profession by various unethical acts; (7) See that the public is protected so that it can always obtain the service of physicians; (8) Revitalize our County Medical Societies and make them leaders in their communities in all health matters; and (9) Inculcate the newly-trained physician in the tradition and ethics of Medicine.

To these policies I am confident all of us should subscribe.

You have heard or will read in the Transactions of the Association the reports of the officers and committees of the Association. These reports speak for themselves and reveal that the men on these committees have given considerable time and study to their problems. I feel that we are due the committeemen a debt of gratitude for their faithful and loyal services.

I should like to call your attention to the report of the Committee on Extension of Membership. After very careful study the Committee found that the present Constitution of the Medical Association of the State of Alabama has been found to demonstrate again the farsightedness of our revered founding father, Dr. Jerome Cochran, in that the Constitution presently provides that graduates of reputable medical colleges who have been licensed to practice medicine in Alabama are eligible for membership in the constituent county societies holding charters from the State Medical Association. I submit that the findings of this Committee are proper and that each of the sixty-seven county societies should extend membership to physicians on a basis of qualifications and merit solely.

The activities of the Committee on Medical Service and Public Relations have been reported to you by Dr. J. O. Finney. At this point I should like to state that it has been a source of great pleasure and satisfaction to have served on this Committee from the time of its formation until April 1952. I would not have you minimize the efforts and achievements of this Committee and its director, Mr. William A. Dozier, Jr. It is my belief that the scope of the work and the efforts being made by these men to improve and further the cause of good public relations and medical service should be given the highest commendation by all of us. Assuredly, we, as doctors of medicine, are not held in as high esteem as were those of one or two generations ago and, to me, it is an absolute necessity for the profession to work together toward a common goal—improvement in

our public relations. In order to do so, we must take an inventory of the most pressing needs and strive to resolve their many and varied implications in such manner as will bring more respect for and consideration of our profession.

The Association is to be congratulated on its good fortune in having had for years Dr. Douglas L. Cannon as its Secretary-Treasurer and Dr. Daniel G. Gill as our State Health Officer. Their wisdom, efficiency, patience and assistance have been a source of great aid to your President during the past year. To them I am greatly indebted for their consideration and assistance throughout my term of office.

During the past two years I have been privileged to attend meetings of the State Board of Censors. I would be remiss if I failed to call to your attention the devotion to duty of its members. The scope of the duties and responsibilities of our State Board of Censors is such that all of us should be extremely grateful for the services rendered the Medical Association of the State of Alabama and the people of the state of Alabama by those of our membership comprising this dignified body of men.

As your President I have made the following appointments: Dr. Carl A. Grote of Huntsville as delegate for two years to the American Medical Association, and Dr. E. Bryce Robinson, Jr. of Fairfield as his alternate, their terms to expire on December 31, 1954. Committee appointments have appeared in the Report of the Secretary.

Our Vice-Presidents, Drs. J. O. Finney, A. J. Treherne, T. J. Payne, Jr., and S. W. Windham, have been very active this year. In each of their respective divisions a meeting was held and all were well attended. Their programs were excellent and were well received. A highlight of each of the meetings has been the social hour and dinner in the evenings following the scientific presentations, in which the ladies of the Auxiliaries participated.

I should like to call to your attention the excellent service rendered to each of us by our delegates to the House of Delegates of the American Medical Association. Dr. Carl A. Grote and Dr. J. Paul Jones have given unstintingly of their time and thought and, in so doing, have made a real contribution to the efforts of our Association.

In October 1952 your President had the privilege of being a guest of the State Auxiliary at a Gadsden meeting, and was accorded the honor of speaking to the ladies of our Auxiliary and their guests. This meeting was well attended by members of the Auxiliary from all over the state as well as by several physicians. Much enthusiasm was shown by those present. I feel that the Auxiliary has demonstrated its effectiveness in many ways in the past and that it will continue to be an instrument of greater usefulness in the future.

In view of the fact that for the past eight years I have been primarily concerned with public relations and medical service as relates to our Association, I became convinced that I should concentrate this message on the fields of public relations and medical service because it is in these fields



that your help is needed most in these changing times.

We do not need to be reminded that during the past twenty or twenty-five years we have undergone a radical change in medical economics and in our public relations. There was a time when the motives, integrity and sincerity of purposes of physicians were never questioned. The doctor occupied a place in the public esteem second to none. This status no longer prevails. In order to regain or at least to improve our position in the public esteem we must find out why segments of the public have become dissatisfied, and then do whatever is reasonable and necessary to remove the cause or causes of this dissatisfaction. I think that all of us will agree that the principal cause of dissatisfaction is the high cost of medical care. We realize fully that through no fault of ours the cost of medical and hospital care has become a burden on people of moderate income. Physicians, because of their knowledge of the economic as well as the social and physical status of their clients, realize the extent of the catastrophe to a family of limited to moderate means when suddenly faced with the necessity of prolonged hospitalization. There is nothing that we can do to lower the cost of medical and hospital service, but we do have a definite, positive plan to so distribute this cost that it can be met without excessive financial hardship on anyone, namely, voluntary prepayment hospital and medical insurance. Doctors who treat their patients expertly and try to help solve their economic problems are doing a public relations job that can be done by no one else.

All of us, I am sure, think that what is good for the public is good for the medical profession. It, therefore, necessarily follows that the long-range interest of the medical profession and the people whom it serves are identical. The Blue Shield Plan of Alabama represents an experiment in cooperative enterprise through which the State Medical Association and the people of Alabama are working together to solve the major economic problems of medical service. It was organized with the expressed approval of the State Medical Association and represents the most important contribution yet made by the Association to the solution of those problems. Without the well-informed, willing and intelligent cooperation of the physicians of the State the Blue Shield Plan of Alabama cannot reach its maximum effectiveness in service, either to the public or to the profession. To this end I feel that I voice the sentiment of all the representatives of the Association on the Executive Committee of the Blue Cross-Blue Shield Plan of Alabama in stating that we will welcome at any time your suggestions for the improvement and increased development of our Blue Shield Plan.

At my request your Blue Shield Plan is represented at this meeting in the exhibit section here at the hotel. I urge all of you to drop by during the meeting and pick up the information that will be available for you.

Since the beginning of medical history physicians have avoided publicity. On occasions we may have used this time-honored stand to cover our failure to supply legitimate information to

the public. Very often we have allowed the public to receive its medical information from persons poorly equipped to give it. We have failed, until in recent years, to realize that the public, being vitally interested in medical matters, has a right to be properly informed. And who is better qualified by reason of training and experience to give this information than the men and women who have spent their lives rendering medical service? We cannot escape the fact that it is incumbent upon us to supply this information because we are best qualified to do so by reason of our training and experience.

Our obligations as physicians and guardians of the public health demand that we exert every effort to protect the people from the dangers of the faddist, quacks and cults. For a number of years various groups have made attempts to procure from the Legislature their own board of examiners and thus be removed from the law, so long in effect, that states that an applicant for a certificate of qualification to treat diseases of human beings by any system whatsoever must be examined by the Board of Censors acting as a State Board of Medical Examiners. Efforts to change the Medical Practice Act were made in the 1951 meeting of the State Legislature, and with such hope of success that only by the introduction of a counter measure by friends of the medical profession were their purposes defeated. It is a well-known fact that another attempt will be made during the coming session of the Legislature. To me it is imperative that we adhere to the conclusions arrived at by the Board of Censors at its October 1952 meeting. These conclusions grew out of recommendations made by the various County Societies. In effect, we are dedicated to the preservation of the Medical Practice Act in its present form. Only by this method may we properly fulfill our moral and legal duty to protect the health of the people of our State. Each individual physician, as well as each County Medical Society, must assume a share of responsibility in this matter. In so doing we must inform the public on our stand and our motives for taking this position. I recommend for your use the two pamphlets which have been made available by the Committee on Medical Service and Public Relations.

In the past several years the matter of medical service to veterans of the United States has become a much larger subject than ever before and the interest in this subject on the part of medical associations and veterans' organizations has increased manyfold. Over the years there has been considerable cooperative effort between the medical profession, the hospitals and the veterans' organizations on many great questions on the American scene. Especially in the past year, numerous conferences between the American Medical Association, the American Hospital Association, and the American Legion have been held in Chicago, Washington and elsewhere. Much good has come out of these meetings on a national level. They have served to point out the obvious fact that much of the misunderstandings between the people making up the organizations concerned was due to lack of knowledge and facts as concerned the problems of veterans' medical care.

When men who were informed brought their collective thinking to bear around conference tables, it was found that a greater appreciation and understanding for each other soon became apparent.

As a result of deliberations of the House of Delegates of the American Medical Association at the December 1952 meeting in Denver, Colorado, it was recommended that liaison committees on the State and national level be created from representatives of the veterans' organizations, medical associations, dental associations and hospital associations to study the problems of medical service to veterans. This action was taken in lieu of proposed resolutions on the part of an investigating committee of the Board of Trustees of the American Medical Association which would have had the American Medical Association go on record as opposing all non-service connected cases receiving treatment in Veterans' Administration Facilities. It is therefore found that at the present time the national organizations of the American Legion and the American Medical Association have placed themselves on record as favoring not only liaison committees of these organizations but have urged that state medical associations, state dental associations and state departments of the American Legion set up and put to work such committees on state levels. In view of the fact that the medical care of veterans is becoming a problem of increasing magnitude, and that the American Medical Association and the American Legion have asked that the problem be studied by state as well as national committees, I recommend that the Medical Association of the State of Alabama set up a committee to study the problem of medical care for veterans.

Your President wishes to add his voice to that of the Committee on Medical Service and Public Relations in one of its recommendations to the Association. This Committee has recommended that our ruling on the payment of dues be changed so that all members who are in the active practice of medicine shall pay the usual dues. In effect this would void our obsolete ruling which says that a physician who has been a member of the Association for thirty years does not have to pay dues. Under this, I will not have to pay dues after this year. At the same time the various programs of the Association and the cost of these programs are increasing. It is my feeling that all of us who are practicing medicine should support these efforts of the Association and do so by continuing to pay dues.

For several years now many of us who have been active in the work of the Association have realized the great need for a permanent home for our Association. Our activities have been directed from several points, which made for inefficiency in many instances. As our activities continue to expand, we feel even more keenly the need for our own facility. As some of us travel to other states, we find there fine buildings which house their Association offices and library and which also contain meeting and exhibit spaces. We feel that our Association should have the same. I believe that the next few years will be the logical time for us to make and execute plans for a building for the Medical Association of the

State of Alabama. Therefore, I recommend that a committee of interested and active physicians be appointed to study this whole matter, including type of building, cost, and methods of raising the necessary funds, and that this committee report to the Association at the next annual session.

Thus I have revealed to you my thinking on several subjects, having in mind constantly the welfare of the Association and its members. In laying down the reins of office, I am in no wise abandoning any of my interests in our organization. Indeed, after the more intimate affiliation I have had with its operation in the past two years, I am prepared to renew my allegiance to the Association and the principles for which it stands. You may be sure that in reciprocating in part for the high honor you conferred on me in allowing me to serve as your President you may count on me to carry my part of the beam, however long and heavy it may be.

#### *Scientific Program*

The first essayist was Dr. John L. Thompson, Jr., of Sylacauga, who read a paper on Viral Hepatitis.

Subarachnoid Hemorrhage was the subject dealt with by Dr. Stanley E. Graham, with Dr. J. Garber Galbraith as joint author, both of Birmingham.

Dr. Keehn Berry, Birmingham, discussed New Concepts in the Treatment of Uremia.

The Clinical Interpretation of Bone Marrow Smears was given by Dr. William H. Riser, Jr., Birmingham.

#### *Miscellaneous Business*

Dr. J. R. Garber introduced a resolution on tuberculosis nurse training which was referred to the Board of Censors.

A tape recording, one of a series made by the Public Relations Committee for use by radio stations throughout the State, was heard. This one on rheumatic fever had the Director of Public Relations as moderator, with Drs. Ruth Berrey, Birmingham, and Kermit Pitt, Decatur, as participants.

Fraternal delegates from the Medical Association of Georgia and the Alabama Pharmaceutical Association were extended the privileges of the floor.

#### *Afternoon Session, Thursday, April 16 2:00 P. M.*

Dr. Paul M. Goldfarb, Mobile, reported a case of Pheochromocytoma in a Child—With a Review of the Literature.

The Evaluation and General Management of Patients with Hypertension was discussed



by Dr. Eugene B. Ferris, Professor of Medicine, Emory University School of Medicine, Atlanta.

Dr. William P. Galen, Birmingham, gave An Evaluation of the New Hypotensive Drugs in the Treatment of Essential Hypertension, with Dr. Howard L. Holley and Mr. Louis Johnson, also of Birmingham, as co-authors.

Dr. Arthur M. Freeman, Jr., Birmingham, discussed Gastrosocopy: Its Value and Limitations.

Needle Biopsy of the Liver was the subject of the paper delivered by Dr. William J. Tally of Gadsden.

Dr. T. M. Boulware, Birmingham, discussed Findings in a Survey to Determine Causes of Maternal Mortality in Alabama.

The last paper of the afternoon was given by Dr. Francis Nicholson, Jasper, on Some Indications for Sympathetic Block.

#### Miscellaneous Business

The Secretary of the Association read a communication from the Limestone County Medical Society relating to the case of Dr. D. E. Jackson. It was referred to the Board of Censors.

A resolution bearing on the State's statute of limitations was presented and referred to the Board of Censors.

#### Social Events

Dr. and Mrs. C. N. Carraway entertained the Association, the wives of members, and guests at a barbecue at Norwood Clinic beginning at 5:30 P. M.

#### Second Day

##### Friday Morning, April 17

##### 9:00 A. M.

Oral Mercurial Diuretics: A Clinical Evaluation was the subject of the paper presented by Dr. William E. Lawrence of Birmingham, with Dr. Stanley Kahn, also of Birmingham, as joint author.

Dr. T. Brannon Hubbard, Jr., Montgomery, discussed the Early Diagnosis of Gastro-Intestinal Cancer.

Dr. J. Ross Veal, Professor of Cardiovascular Surgery, Georgetown University School of Medicine, Washington, D. C., dealt with Diseases Affecting the Superior Vena Caval System.

The Jerome Cochran Lecture was delivered by Dr. Champ Lyons, Professor of Surgery, Medical College of Alabama, Birmingham, his subject being Metabolic Aspects of Convalescence.

President McNease awarded Certificates of Distinction to the following physicians of Alabama who have been practicing their profession for fifty years:

Robert F. Ashworth  
Frank Blanton  
William T. Cocke  
Miles A. Copeland  
James R. Dawson  
George L. Faucett  
F. W. Galloway  
Henry W. Gray  
Ira L. Johnston  
Carney G. Laslie  
Earl F. Lee  
Bartlett J. Massey

R. L. Milligan  
Samuel D. Motley  
William M. Pierce  
John R. Pow  
Thurlow W. Reed  
John T. Roberson  
George W. Salley  
Daniel H. Trice  
James A. Watson  
Marvin S. White  
John W. Wilson

#### Miscellaneous Business

Dr. D. G. Gill discussed with the Association the method of distribution of gamma globulin to be assigned the State in 1953.

Dr. E. V. Caldwell enlisted the interest of the members of the Association in the State Department of Health's current legislative program.

The Secretary of the Association announced vacancies as follows in the College of Counsellors:

1st Congressional District—2. J. D. Perdue is to be elevated to Life Counsellor; William T. Cocke's second term of seven years has expired.

2nd Congressional District—4. John A. Martin and L. D. Parker are to be elevated to Life Counsellors; the second term of seven years of N. W. Killingsworth and Hinton W. Waters has expired.

3rd Congressional District—2. Frank H. Boyd's second term of seven years has expired. Millard W. Samford's first term of seven years has expired.

4th Congressional District—1. Marcus Skinner's second term of seven years has expired.

5th Congressional District—2. Charles E. Ford is deceased. The second term of seven years of J. O. Morgan has expired.

6th Congressional District—1. Thos. J. Anderson is to be elevated to Life Counsellor.

7th Congressional District—3. Walter A. Gresham is to be elevated to Life Counsellor; the second term of seven years of Lewis C. Davis and R. Lee Hill (Haleyville) has expired.

9th Congressional District—3. John D. Sherrill's second term of seven years has expired; Joseph M. Donald's first term of seven years has expired, as has that of Edgar G. Givhan, Jr.

#### Social Events

Past Presidents of the Association had lunch together at the Thomas Jefferson Hotel at 12:30 P. M.

**Afternoon Session**

**Friday, April 17th**

**2:00 P. M.**

The Early Management of Injuries of the Hand was discussed by Dr. Francis A. Marzoni of Birmingham. Dr. Samuel E. Upchurch was co-author of the presentation.

The Use of the Gonadal Steroids was the subject of the lecture delivered by Dr. Robert A. Kimbrough, Jr., Professor of Obstetrics and Gynecology and Chairman of the Department, Graduate School of Medicine, University of Pennsylvania, Philadelphia.

Dr. John W. Donald, Mobile, read a paper entitled Gastric Resection for Peptic Ulcer.

A Report on Thirteen Years' Experience with the Doctor-Sponsored Blue Shield Movement was given by Dr. Robert L. Novy, Professor of Clinical Medicine, Wayne University College of Medicine, Detroit.

The Diagnosis and Management of the Irritable Colon were discussed by Dr. A. Wade Alford, Birmingham.

Dr. W. Sterling Edwards, Birmingham, read a paper entitled Recent Trends in Surgery of Obliterative Peripheral Arterial Disease.

**Social Events**

Simon-Williamson Clinic entertained members of the Association and physician guests at a cocktail party at 5:00 P. M.

Members of the Association, their guests, and visiting physicians were entertained by Dr. James S. McLester and Dr. James B. McLester at a cocktail party in the late afternoon at their offices, 930 S. 20th Street.

The Jefferson County Medical Society was host to members of the Association, their wives and guests at the Birmingham Country Club from 9:00 P. M. to 1:00 A. M.

(To be concluded in the June issue)

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Health education of the public . . . is often considered the responsibility of organized voluntary and official community agencies. Of course, it is also the physician's personal responsibility. He certainly should educate his patients and their families and do what he can as part of the community program. Health education methods have changed materially in recent years, with much greater emphasis on community organization and on helping the people to help themselves.—*Hugh R. Leavell, M. D., New England J. Med., December 4, 1952.*

**Enjoy Your Trip to Europe**—So you are going to Europe! Well, go and have fun, and don't worry about your health. For, if you follow a few, simple, time-tested rules and suggestions, you can have a happy, healthy trip, according to Dr. E. O. Nichols, Jr., Plainview, Texas.

Health questions which may arise regarding a European trip and their solutions were given by Dr. Nichols in the current *Today's Health* magazine, published by the American Medical Association. The conclusions were based on Dr. Nichols' own experiences during a three-month trip through nine European countries.

Before departing for Europe, it is necessary to have a smallpox vaccination, as the United States demands a certificate indicating that you have been vaccinated within three years of your re-entry into the country, Dr. Nichols pointed out. He also recommended immunization against typhoid and paratyphoid and immunization of children against diphtheria.

Have your physician aid you in preparing a small medical kit before leaving on your trip, he added. Included in the kit should be a pain-killer such as aspirin, a mild sedative, a motion sickness preventive, a preparation to alleviate food poisoning or eating indiscretions, and one of the major antibiotics to counteract any real infection which may occur.

"If you have any physical disability or a medical past that might become a clinical future, be certain you get a transcript of your record from your doctor," Dr. Nichols said. "It might prove invaluable, especially in places where English is poorly understood; for the written language of medicine is almost international, and much easier to understand than your own halting explanation."

A thorough physical examination prior to leaving also was recommended by Dr. Nichols, as was the taking of an extra pair of dentures and glasses.

There is little medical preparation necessary for the time in transit to Europe, he stated, as boats have first-class health facilities. If you have a heart condition, check with your physician before planning to fly to your destination.

For any real illness that occurs while in Europe, use caution in obtaining medical care, Dr. Nichols stressed. The United States consul will be able to direct you to a well-trained physician. If a specialist is needed, you should ask your doctor to call in one of the professors at a nearby university for consultation.

Europe's pharmacies contain not only most American products, but also are loaded with a wide variety of excellent European ones, he stated, adding:

"Hence, do not worry: satisfactory medical care is always available to the traveler in Western Europe."



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## STATE DEPARTMENT OF HEALTH

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### BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

### PROGRESS IN POLIOMYELITIS

Contributed by

John M. Gibson, Director

Division of Public Health Education

You may recall how, as a youngster, you participated in rural high school debates. Or perhaps you were not a participant but a listener, paying intent attention to the arguments of both sides and encouraging your side as much as you could. The subjects fought over in those frequent and lively clashes varied widely. Was Washington a greater man than Lincoln? Was Grant a greater general than Lee? (Unless you were in the North, you almost certainly found Grant an unpopular side.) Had the horse done more for agriculture than the mule? Was the automobile here to stay, or was it just a passing fad? Was Beethoven a greater composer than Bach? (This was usually fought over by high-brows.) Was Webster a greater orator than Clay? Had the Army served our country better than the Navy? Was the country a better place to live than the city? Were dime novels really harmful to young minds? And so on and on.

One of the popular debate topics of that vanished era had to do with the relative merits of summer and winter. Were people happier in hot weather than in cold? Were they healthier? Were winter sports more fun than summer sports? Was it worse to "burn up" in July or to "freeze" in January?

Like all other subjects hotly fought over a generation or two ago, this one was never settled once and for all. The judges returned their decisions, sometimes for one side, sometimes for the other. There was a burst of applause, followed by congratulations for the winning debate team. But, a few weeks or months later, the subject was wide open and debated as hotly as before, with, this time, the other side winning perhaps.

Poliomyelitis (infantile paralysis) existed in those days. But it was nothing like the problem it is nowadays. In fact it was so

very rare that it could hardly have been considered a health problem at all. So it is questionable whether even a single one of those earlier-generation debaters ever mentioned it as an argument in favor of winter. But, if such debates were held in country schools at the present time, members of debating teams defending cold weather against hot probably would make much of the fact that poliomyelitis is a warm weather disease. They would point out, with eloquent emphasis, what a serious disease it is and how lucky youngsters are that they and their parents do not have to worry about it, except as a remote possibility, from early fall until late spring or early summer.

But those imaginary high school debaters we are thinking about would not find the poliomyelitis argument as potent now as it was a few years ago. For substantial progress has been made in curbing this warm weather disease. Unfortunately, its complete mastery is not yet in sight. But conservative men and women of medicine and public health will tell you there is hope that it is not far over the horizon. And they will tell you too that many of the fears people have of the disease are not soundly based; that, under present conditions, poliomyelitis is not as bad as it often is painted.

One thing about poliomyelitis which you may not know it that many people have it without knowing they do. Indeed you cannot be certain that you yourself have not had it. For the crippling type you see and read about is the unusual type. For every case of that kind there are several others that leave slight crippling or none at all.

Alton L. Blakeslee, science writer, paints an optimistic picture of the poliomyelitis patient's outlook in a booklet he authored. Its very title exudes optimism. For it is "Polio Can Be Conquered." The booklet is one in a series issued by the Public Affairs Committee, Incorporated, a non-profit educational organization.

"The conquest of polio is in sight," Mr. Blakeslee wrote. "No one can predict just when the victory will come, or in what way. But medical science, with your help, is mak-

ing such progress that there is real cause for optimism."

Mr. Blakeslee went on:

"The disease is feared largely because of its mystery. But slowly the pieces are being fitted together in one of the most intricate of medical jigsaw puzzles.

"Poliomyelitis is like a strange, unfamiliar house down one road in a fast-building neighborhood of medical knowledge. In the outside darkness we cannot quite make out its shape and design. Inside, only a few rooms are lighted. One room with dim lights is Cause. We can make our way through the room of Symptoms. Next—much better lighted now—is Treatment. And nearby is a room of Financial Cost, so brilliantly lighted by the generosity of Americans that it holds no fears."

There are some other rooms for which no keys have yet been fashioned, Mr. Blakeslee tells us. But through the keyholes (which, fortunately, are there) we can see some dim outlines of the furniture. Some day, he is sure, we shall be able to unlock those doors. We shall be able to enter those rooms. Then they, too, will be alight. Then we shall know, for example, why one child is attacked by this dread disease and another misses it. We shall know a great deal more about how to prevent it. We shall have—or at least our doctors will have—a more satisfactory means of diagnosing it. And, most important of all, we shall have more effective ways of curbing it.

So much for long-range optimism. So much for the outlook for poliomyelitis' eventual conquest. That is all very good. But it does not mean much to the boy or girl who develops poliomyelitis. What is such a youngster's outlook? What does life offer him or her?

Mr. Blakeslee has good news for that youngster too. Let us turn again to his booklet:

"The disease seems rarely to hit anyone so severely that he becomes paralyzed. Even when that does happen, it doesn't mean that he will be left crippled or handicapped. Young Joan Smith, a pretty, dark-haired physical therapist at a New York City hospital can and does set her patients straight on that score.

"When Joan was a high-school girl of fifteen, she was stricken with polio and was badly paralyzed. She couldn't move her legs or her arms. The muscles of her neck were partially paralyzed, as were some of the muscles of her shoulders, abdomen and back. For a time her future seemed hopeless.

"Today Joan is fully recovered. For her life work she chose physical therapy, and works a

full, strenuous day retraining and re-educating the muscles of youngsters hit by polio as she once was. And their chances are good."

Then that science writer gets down to figures and percentages. Again he brings a message of optimism:

"Forty to 60 per cent of the children or adults who do get the illness in recognizable form will recover completely, or almost completely, without any visible evidence of paralysis.

"Another 25 to 30 per cent will recover with only a mild degree of paralysis. There will be so little that they can carry on ordinary activities and live pretty much as they had planned to do.

"Only 15 to 25 per cent will be left more or less severely handicapped, unable to use some muscles. But rehabilitation and special devices can do wonders with them."

Poliomyelitis as we know it is a pretty rare disease after all. In a typical month, for example, only 13 cases were reported from all over Alabama. During the same period the State Department of Health had reports of 1,165 measles cases. (Thus reported measles cases outnumbered reported polio cases by nearly 90 to one.) That month also brought the reporting of 221 chickenpox cases, 168 mumps cases, 378 cancer cases, 152 pneumonia cases, 20 cases of scarlet fever, 72 cases of whooping cough, 166 cases of tuberculosis and 251 cases of influenza. Only 18 Alabama deaths were attributed to poliomyelitis in a year chosen at random. Twenty-two other specific diseases killed more Alabamians during that same 12-month period. The list would be extended to 29 if we included such mortality factors as conditions associated with pregnancy and childbirth, congenital malformations, premature birth, senility, suicide, homicide and accidents. As Mr. Blakeslee points out, poliomyelitis is so rare that it takes only a relatively few cases to constitute an epidemic. He sets the line of demarcation between non-epidemic and epidemic conditions at about 20 recognized cases per 100,000 population. Thus in Alabama any year in which as many as 600 polio cases are reported may be regarded as an epidemic year.

But poliomyelitis, like certain other diseases, can be a serious matter without attacking a large number of people. It can give parents anxious hours without becoming significantly fatal. This form of illness qualifies as a major health problem on several counts. For one thing, recovery is slow and by no means certain. For another, it is an expensive disease, requiring expert medi-



cal care and specialized nursing. Again, it leaves in the aggregate a large number of children and adults permanently handicapped. (Mr. Blakeslee estimated them at about 5,000 a year.) And of course, while poliomyelitis does not rank among the major killers, it is sometimes fatal. (Those whom it kills are estimated at about five to eight per cent of those who have recognized cases.)

Certainly fewer people would get poliomyelitis if our doctors knew more about the manner of its transmission. Mr. Blakeslee calls that "one of the tightly locked doors" in the house of polio knowledge. We do know something about it, however. We know, for instance, what must happen before a child or older person can get the disease: he must receive into his body an infinitesimally small organism known as a virus. Even the largest virus is much smaller than most bacteria. And the polio virus is one of the tiniest of viruses. You can get a pretty good idea of its size when I tell you that as many as 25,000,000 could be accommodated on the head of a pin.

We are not sure we know exactly how that virus passes from the person having the disease to someone else. However, there is a strong inclination to think that close physical contact makes that transmission easier. Unlike the virus that gives millions of us bad colds and influenza in the winter, the polio virus is not believed to be transmitted in the tiny droplets that are sprayed out into the atmosphere when people cough or sneeze. There is strong reason to believe it travels from the polio-sick to the well in food. It may make that journey on improperly cleaned dishes or eating utensils. Carelessly washed hands may become bridges of infection. These viruses may travel from person to person in dust particles floating about in the air. And the thought has been suggested that they may be admitted to the body through the skin.

Poliomyelitis has this in common with certain other diseases: You may have the causative organism in your intestinal tract without having the disease. If you do, you are capable of transmitting the disease to others. Why so many receive the viruses and so few, relatively speaking, develop the disease is one of the still-unanswered questions of poliomyelitis. Do the many have a great deal of resistance and the few very little? Is the person who develops polio just

unfortunate enough to get the virus when he is in a run-down condition? Do certain physical or racial groups enjoy a greater degree of immunity to this type of infection than others?

Then there is the matter of seasonal incidence. Why does it smolder like a neglected campfire in the winter and burst into flame in the summer? How does this fact square with another fact about poliomyelitis: that the polio virus is unusually tough, so tough that it has little trouble staying alive and dangerous during half a year's existence in a refrigerator? Does this mean that it is not warm weather *per se* but the conditions that warm weather brings which set mothers to worrying in the spring and summer? Do insects (which are much more numerous and active in warm weather) play the dominating role in polio virus transmission? Does the food we eat in warm weather lessen our resistance to that virus invasion? Many authorities attribute cases to swimming in polluted water. But is that actually a factor? If it is, is it an important one?

As you may have surmised, there is still much to find out about poliomyelitis. It is still definitely one of our unconquered illnesses. But there is encouragement in the knowledge that we are making progress. We are on our way.

## BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

March 1953

### SPECIMENS EXAMINED

|   |        |
|---|--------|
| Brucella cultures .....   | 19     |
| Examinations for diphtheria bacilli and Vincent's .....         | 230    |
| Agglutination tests (typhoid, Brill's and undulant fever) ..... | 932    |
| Typhoid cultures (blood, feces and urine) .....                 | 477    |
| Examinations for malaria .....                                  | 110    |
| Examinations for intestinal parasites .....                     | 3,782  |
| Serologic tests for syphilis (blood and spinal fluid) .....     | 25,621 |
| Darkfield examinations .....                                    | 4      |
| Examinations for gonococci .....                                | 1,653  |
| Examinations for tubercle bacilli .....                         | 3,317  |
| Examinations for meningococci .....                             | 0      |
| Examinations for Negri bodies (microscopic) .....               | 273    |
| Water examinations .....  | 1,592  |
| Milk and dairy products examinations .....                      | 4,814  |
| Miscellaneous .....   | 1,133  |
| Total   | 43,957 |

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS  
1953

|                               | Jan.  | Feb.  | E. E.*<br>Feb. |
|-------------------------------|-------|-------|----------------|
| Typhoid and paratyphoid fever | 6     | 3     | 3              |
| Undulant fever                | 2     | 0     | 2              |
| Meningitis                    | 23    | 27    | 16             |
| Scarlet fever                 | 88    | 40    | 62             |
| Whooping cough                | 25    | 17    | 94             |
| Diphtheria                    | 21    | 10    | 26             |
| Tetanus                       | 1     | 3     | 2              |
| Tuberculosis                  | 155   | 133   | 191            |
| Tularemia                     | 1     | 3     | 2              |
| Amebic dysentery              | 1     | 0     | 2              |
| Malaria                       | 1     | 0     | 13             |
| Influenza                     | 35312 | 36895 | 1463           |
| Smallpox                      | 0     | 0     | 0              |
| Measles                       | 260   | 506   | 346            |
| Poliomyelitis                 | 8     | 2     | 5              |
| Encephalitis                  | 1     | 2     | 1              |
| Chickenpox                    | 617   | 547   | 186            |
| Typhus fever                  | 4     | 0     | 9              |
| Mumps                         | 141   | 147   | 191            |
| Cancer                        | 364   | 470   | 247            |
| Pellagra                      | 4     | 3     | 1              |
| Pneumonia                     | 705   | 1071  | 403            |
| Syphilis                      | 170   | 167   | 736            |
| Chancroid                     | 3     | 7     | 9              |
| Gonorrhea                     | 317   | 319   | 441            |
| Rabies—Human cases            | 0     | 0     | 0              |
| Positive animal heads         | 70    | 116   | 0              |

As reported by physicians and including deaths not reported as cases.

\*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

THE RELATIVE DIETARY QUALITIES OF  
BUTTER FAT AND VEGETABLE  
OILS

Contributed by

U. D. Franklin, B. S., M. S.  
Sanitarian

Experiments in this field of study, using the diet of calves, have been conducted for more than a decade by the University of Minnesota. A recent report issued by Dr. Thomas W. Gullickson, Professor of Animal Husbandry at the University, reveals that, so far, no suitable substitute for butterfat in the diet of calves is to be found among vegetable oils or animal fats. Vegetable oils used in the course of the experiments were taken from corn, cottonseed, coconuts, and peanuts. Lard, beef tallow and a non-fat milk also were used. For comparison a similar group of calves were fed whole milk.

Dr. Gullickson's report, entitled "In The Trials," states that "only calves that were healthy and thrifty were used. They usually were fed whole milk (colostrum the first day or two after birth), two weeks after which they were shifted gradually to the desired fat-filled milk. The rations in all cases were supplemented with adequate amounts

of vitamins A and D and essential minerals. Hay and concentrates usually were not fed until the calves were several weeks old and in some cases not at all. Invariably, under this plan of feeding, all calves fed the vegetable fat-filled milk ration died within a comparatively few weeks after being placed on such diets."

The report further states that the calves put on the vegetable fat-filled milk diets "generally made fair gains in weight for several weeks to a month or more after being started on the diet. This was followed by a period of no gain and this in turn by rapid loss in weight terminating in death."

During the study various supplements were added to the vegetable fat-filled milk diet. None of these supplements were effective in preventing the onset of the syndrome and the ultimate death of calves fed on such a diet. However, it is stated in the report that "Some calves in the advanced stage of the syndrome have been restored to normal simply by shifting them to a normal whole milk diet."

Studies were also made on the effect of replacing various proportions of the vegetable oil with butterfat. These tests indicated that the physical well-being of the calf under such conditions varied directly according to the proportion of butterfat present in its ration. The group of animals on the non-fat milk ration remained normal in appearance during the experiment but they did not have the sleek, well-fed appearance of the calves fed whole milk. Since the recent research by Dr. Gullickson has confirmed earlier findings that dairy calves fed whole milk enjoy normal growth while calves fed various vegetable oils homogenized in non-fat milk were dead within a few weeks, no doubt further study will be made in comparing the nutritional differences between butterfat and vegetable fats in various diets as they relate to both animal and man.

Only by the discovery and treatment of the early case can the ultimate conquest of tuberculosis be effected. Mass x-ray surveys have contributed immeasurably toward this end. At the same time the number of new-found cases, coupled with the decided decrease in the disease mortality rate, has created an increased need for additional beds. That need has now reached alarming proportions and constitutes a major problem in tuberculosis control.—J. Winthrop Peabody, M. D., J. A. M. A., December 13, 1952.



## BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

## PROVISIONAL BIRTH AND DEATH STATISTICS FOR DECEMBER 1952, AND COMPARATIVE RATES

| Live Births<br>Stillbirths and<br>Deaths by Cause                       | Number<br>Registered<br>During<br>December 1952 |       |         | Rates*<br>(Annual Basis) |       |       |
|---|---|-------|---------|--------------------------|-------|-------|
|   | Total   | White | Colored | 1952                     | 1951  | 1950  |
| Total live births   | 7122  |       |         | 26.8                     | 27.1  | 27.1  |
| Total stillbirths   | 187   |       |         | 25.6                     | 23.6  | 29.5  |
| Deaths, stillbirths<br>excluded   | 2589  | 1461  | 1128    | 9.7                      | 9.1   | 9.9   |
| Infant deaths:  |   |       |         |                          |       |       |
| under one year  | 285   | 127   | 158     | 40.0                     | 43.0  | 40.2  |
| under one month   | 171   | 86    | 85      | 24.0                     | 28.0  | 24.3  |
| Cause of Death  |   |       |         |                          |       |       |
| Tuberculosis, 001-019   | 34  | 13    | 21      | 12.8                     | 21.6  | 26.5  |
| Syphilis, 020-029   | 6   | 1     | 5       | 2.3                      | 3.4   | 6.1   |
| Dysentery, 045-048  | 1   |       | 1       | 0.4                      | 0.8   | 0.4   |
| Diphtheria, 055   | 1   |       | 1       | 0.4                      | 1.9   |       |
| Whooping cough, 056   | 2   | 1     | 1       | 0.8                      | 1.5   | 0.8   |
| Meningococcal infections, 057   | 9   | 6     | 3       | 3.4                      | 0.8   | 1.2   |
| Poliomyelitis, 080, 081   | 3   | 1     | 2       | 1.1                      | 0.4   | 0.8   |
| Encephalitis, 082, 083  |   |       |         |                          |       | 0.4   |
| Measles, 085  |   |       |         |                          | 0.8   |       |
| Malaria, 100-117  |   |       |         |                          |       | 0.4   |
| Malignant neoplasms, 140-205  | 257   | 183   | 74      | 96.7                     | 91.8  | 82.1  |
| Diabetes mellitus, 260  | 29  | 18    | 11      | 10.9                     | 14.4  | 10.7  |
| Pellagra, 281   | 2   | 2     |         | 0.8                      | 1.1   | 0.4   |
| Vascular lesions of<br>central nervous system, 330-334                  | 338   | 179   | 159     | 127.2                    | 117.2 | 122.8 |
| Other diseases of nervous system, 300-318, 340-398                      | 46  | 28    | 18      | 17.3                     | 11.8  | 18.0  |
| Rheumatic fever, 400-402  | 2   | 1     | 1       | 0.8                      |       | 2.7   |
| Diseases of the heart, 410-443  | 791   | 491   | 300     | 297.7                    | 267.9 | 289.6 |
| Diseases of the arteries, 450-456                                       | 38  | 27    | 11      | 14.3                     | 15.9  | 11.9  |
| Other diseases of the circulatory system, 444-447, 460-468              | 44  | 16    | 28      | 16.6                     | 11.8  | 10.0  |
| Influenza, 480-483  | 36  | 18    | 18      | 13.5                     | 7.6   | 8.4   |
| Pneumonia, 490-493  | 108   | 43    | 65      | 40.6                     | 46.3  | 43.4  |
| Bronchitis, 500-502   | 9   | 6     | 3       | 3.4                      | 1.5   | 2.7   |
| Appendicitis, 550-553   | 4   | 3     | 1       | 1.5                      | 2.7   | 1.5   |
| Intestinal obstruction and hernia, 560, 570, 561                        | 10  | 7     | 3       | 3.8                      | 6.1   | 5.4   |
| Gastro-enteritis and colitis (under 2) 571.0, 764                       | 13  | 4     | 9       | 4.9                      | 4.2   | 3.8   |
| Cirrhosis of liver, 581   | 15  | 10    | 5       | 5.6                      | 8.3   | 3.4   |
| Diseases of pregnancy and childbirth, 640-689                           | 15  | 4     | 11      | 20.5                     | 10.9  | 20.6  |
| Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684 | 2   |       | 2       | 2.7                      | 1.4   | 4.1   |
| Congenital malformations, 750-759                                       | 34  | 19    | 15      | 4.8                      | 3.1   | 4.5   |
| Accidental deaths, total, 800-962                                       | 199   | 114   | 85      | 74.9                     | 58.4  | 83.2  |
| Motor vehicle accidents, 810-835, 960                                   | 66  | 44    | 22      | 24.8                     | 19.7  | 36.1  |
| All other defined causes  | 402   | 214   | 188     | 151.3                    | 153.7 | 177.2 |
| Ill-defined and unknown causes, 780-793, 795                            | 141   | 52    | 89      | 53.1                     | 50.5  | 56.8  |

\*Throughout this report rates are expressed as follows: birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based on the December report of the years specified.

**Treatment of Otitis Externa**—My personal procedure is as follows: First cleanse the canal with a warm water douche. Then blot it dry with a bit of absorbent cotton held with bayonet forceps, being careful not to bruise the canal wall. The drying is necessary, for water seems to aggravate this condition. Some cleanse the canal with alcohol, then ether, which is a good procedure, for it not only dissolves out the oil, but helps to kill some germs, or at least to get them drunk. Of course, some canals are so completely occluded and painful, or the child wiggles so much, that this routine cannot be carried out.

Take a wisp of long staple absorbent cotton and twist into a slender plug, which will fit the canal. Then with a bayonet forceps, just touch the end in pure Cresatin (metacresol acetate), not too much. Pack this wick up against the drum membrane and tightly into the canal. I suggest this tight packing because it stretches the ear canal lining, thereby opening the ostia of the numerous little sebaceous glands lining the external auditory canal, allowing the Cresatin to penetrate more freely. The pressure also acts in an analgesic way. If there is actual pain from pressure against the drum membrane, the pack may be released slightly. This is an office procedure, for the patient cannot do it himself at home, and his relatives will not.

The antiseptic action of Cresatin is due to metacresol, which is liberated slowly on prolonged contact with the tissue surfaces. Its oily character causes it to adhere tenaciously. Cresatin not only acts as an antiseptic and analgesic, but is hygroscopic, and its odor is not unpleasant.

The pack is left in for 24 hours. The next day it is removed, and a new wick is inserted without preliminary cleansing. After three or four treatments, the whole inside of the canal may look like it has been burnt too much. Quite the contrary, it is necessary to burn the surface epithelium off to get at the bottom of these little sebaceous glands. Again, it is like digging Bermuda grass out by the roots, rather than just skimming the top off with a hoe, which looks nice for a day or so. As an adjunct to this treatment, I sometimes tell girls, who have long hair shading the ear, to comb the hair back and point the ear towards the direct sunlight for 20 minutes a day. Also, other general measures are to be used. In some of the dry scaly types of otitis externa a Cresatin ointment may be preferable.

After you are absolutely sure the condition is cured, then treat it for another week. In other words, as far as the germs are concerned, "never give a sucker an even break."—Turnley, J. Florida M. A., April '53.

1954 MEETING  
OF THE ASSOCIATION  
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## THE MANAGEMENT OF HAND INJURIES

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and

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Birmingham, Alabama

In the past ten years great improvements have been made in the management of hand injuries. These improvements lie not only in the surgical judgment employed in handling a given case but also in the refinement of operative techniques.

In perhaps no other field of surgery can results be so improved by painstaking attention to the principles of meticulous care and atraumatic technique. Many operative results have been disappointing both to the surgeon and the patient because of failure to apply true atraumatic surgery. When one is dealing with a structure as compactly constructed as the hand, gentle handling of tissues, absolute hemostasis, wound closure without tension, and pressure dressings are of greatest importance. Large clamps grossly applied, forceps of undue size, and coarse suture material have little application in any field of surgery, and can only be condemned in reparative or reconstructive surgery on the hand.

A few general principles of early management of hand injuries should be mentioned before giving details of skin coverage, tendon and nerve repair, and the like.

The use of antibiotics has extended by a considerable length of time the so-called "golden period" of surgery. Only a few years ago it was considered sound surgical judgment to defer extensive reparative procedures in the hand if more than six hours had elapsed since injury. Now, with early, proper care and chemotherapy, this length of time has been extended in most cases to

twelve hours and, in some exceptional instances, to twenty-four hours.

In the majority of hand injuries the best treatment before hospitalization should be limited to the application of a sterile pressure dressing, and some simple splint which prevents motion. In many instances, injudicious exploration of fresh wounds has done irreparable damage, and a final good result thereby jeopardized. General physical examination and x-rays as indicated may now be done without removing the original dressing. Only after the patient has reached the operating room and a bloodless field assured by applying a pneumatic tourniquet should sensory and motor examination and a diagnostic exploration be done. As Bunnell<sup>1</sup> has stated, "Repairing a hand without a bloodless field is somewhat similar to repairing a watch in an ink well."

A large number of seriously injured hands will be quite dirty and filled with grease and other foreign materials. These should be cleansed with mild soap and water, a skin detergent, and copiously irrigated with normal saline. In some cases ether should be judiciously applied around the margins without flooding the wound itself. Following thorough cleansing, gross debridement and irrigation, a non-toxic type of antiseptic may be used for additional skin cleansing, sterile drapes applied and the operation begun. Severed tendons and nerves can be readily identified. All grossly devitalized tissue is debrided with delicate instruments, and a decision can be made whether there is

Read before the Association in annual session, Birmingham, April 17, 1953.

1. Bunnell, S.: *Surgery of the Hand*. J. B. Lippincott Co., Philadelphia, 1944.



adequate skin coverage for immediate reparative work.

Assuming that adequate skin and soft tissue covering is present, and that we are concerned primarily with severed tendons, nerves and fractures, there are two general methods of management of acute hand injuries. Each method has its strong proponents. The first method is that of immediate primary repair of all structures by the method of one's choice.

The second method is as follows: After the usual irrigation and debridement mentioned previously, the wound is explored and a careful note made of all injured structures. If one desires, a small silk suture may be placed through proximal and distal tendon and nerve stumps to aid later identification. The wound is then closed, a pressure dressing applied, and the hand splinted in the position of function. After an interval of three to six weeks the hand can be reentered through an incision of choice made in a clean sterile field under optimal conditions. Nerves which have been severed will by this time show obvious gross changes and one may ascertain the proper level for nerve anastomosis. Tissue thought to be normal at the initial exploration may now be seen to be diseased, and may be removed in order to prevent excessive scar formation. Nothing hampers hand function more than scar tissue. This can be minimized by the judicious use of tiny drains removed after 24 to 48 hours and by pressure dressings limiting edema.

In tendon suture we prefer the pull-out wire technique of Bunnell, regardless of immediate or delayed repair. In this way no foreign suture material remains in the tendon or tendon sheaths. For nerve suture only the very finest material is used, preferably 6-0 braided silk. If these repairs can be carried out and the hand splinted in the position of function with a pressure bandage, so much the better. However, in many instances where considerable tissue has to be sacrificed one may have to place the fingers and wrist in flexion to avoid tension on the suture lines. Tendon healing usually takes place in eighteen to twenty-one days, and at that time one should gradually begin to return the hand to the position of function.

Depending on circumstances, it is our feeling that the latter method of delayed repair is more satisfactory. This is, of course, obvious when there has been loss of skin which

must be replaced by pedicle grafts. It is our feeling that in most instances adequate nerve repair at the time of initial injury can only rarely be done.<sup>2</sup>

We cannot leave this portion of the subject without a few remarks about severed flexor tendons in the fingers. The so-called no-man's land of tendon surgery lies in the area between the distal palmar crease and the middle flexion crease of the fingers. In this area both the profundus and the sublimis tendons are running together through a tunnel of closely fitting fibrous tissue. If tendons cannot slide through this narrow tunnel, their function is lost, and one has an almost useless finger. Lacerations in this area, while often small and seemingly inconsequential, are those which give the most trouble as far as full return of function is concerned. A few general principles may be stated. If one decides on primary repair of such a wound, the flexor apparatus is exposed by a transverse incision on the side of the finger, allowing adequate exposure. When one is dealing with a profundus tendon laceration in this area it is mandatory that the sublimis tendon now be sacrificed by completely removing it from the finger. This should also be done when the sublimis alone is injured. The initial wound through which the tendon was injured is undisturbed as far as possible except for closure at the end of the procedure.

Incisions on the flexor surfaces of the finger and particularly those perpendicular to the creases cannot be condemned too strongly. Even if the injury has been caused by sharp instruments such as a knife or razor blade, one is rarely justified in repairing the flexor profundus tendon in this area. Many surgical procedures which should have given good results have failed because one very simple and quick procedure was not carried out. The tunnel through which the tendon runs should be opened. As stated before, this fits the tendons snugly and should be divided throughout its length in order to allow for the postoperative swelling which is certain to occur in the healing tendon. If this tunnel is not opened, pressure necrosis of the tendon may occur or adhesions form between the tendon and the tunnel. This blocks the sliding mechanism and leaves the patient with a finger which does not have flexion of the distal joints. It is in this type of hand injury that surgical judgment is put to its greatest test.

2. Woodall, B.: Personal Communication.

It is our feeling that in the majority of cases the best final result is achieved by the secondary approach. The laceration is closed after thorough cleansing. The joints are kept supple by passive motion for three to six weeks. At this time the injury site is explored through properly planned incisions. The sublimis tendon is withdrawn in the hand or wrist. In order to avoid an anastomosis in the area of the injury itself, a tendon graft is usually employed. In rare instances the sacrificed sublimis is quite satisfactory. In most cases the palmaris longus tendon, which is easily removed, is employed. Anastomosis is done in the hand, the tendon is threaded down the finger, the distal profundus is sacrificed, and the tendon attached to the bone of the terminal phalanx. The Bunnell pull-out wire technique has its greatest advantage here. After complete hemostasis is obtained and the incision is closed, the hand is splinted in a position of function with a large pressure dressing. Rehabilitation begins between two and three weeks, with frequent visits by the patient for encouragement and instruction as to physiotherapy. Even in young persons in whom the operation has been properly planned and executed, function is slow to return, and one should not be discouraged until several months have elapsed. Active motion is, of course, most desirable, but joints must be kept supple by passive motion. It has been stated that after the best operative procedure, and assuming all conditions to be optimal, 30 per cent of the final result rests in the ability of the patient to cooperate and to exercise faithfully for many weeks following the operation itself.<sup>3</sup>

It might be wise to give here a brief review of some of the uses of skin grafts, and pedicle grafts in particular. In avulsion wounds of the hand where the deeper structures are not injured and where the tendon sheaths and paratenon are present, free, thick, split-thickness skin grafts are of great help. The best dressing for any wound is skin, and if a surface presents itself which will accept a free skin graft, this should be done. However, many hands have become fixed with fibrous adhesions because of failure of free skin grafts, and by the physician allowing long periods of time for secondary healing to take place. It is many times wiser to use a small pedicle graft if one is in doubt, for then there is no waiting period

which may give further joint contracture and fibrous fixation which can never be corrected later in most instances. Where tendon or nerves are severed with skin loss in addition, pedicle flap repair and delayed definitive surgery are a necessity.

Another common injury should be discussed before examples are reported. Frequently fingertip losses occur as a result of accidents involving automatic slicing machines or heavy moving machinery. Hands caught in grinding mills or heavy drill presses commonly show this type of injury. All of the soft tissues of the fingertips may be gone and the insertion of the profundus tendon exposed. Two courses of action are open to the surgeon in this problem. Amputation of all or part of the digit is the procedure which most commonly comes to mind, and actually is the one most commonly employed. Only in the rare case is this justified. In our opinion the procedure of choice is to substitute the missing tissue by means of a pedicle graft from the thenar eminence of the hand, or more commonly by means of a small pedicle graft from the abdominal wall. This procedure is done in stages and, if necessary, local anesthesia can be used, though general anesthesia is the procedure of choice. The avulsed skin and subcutaneous tissue are replaced and the hand immobilized so as to insure prompt healing. At the end of two or three weeks the attachment of the pedicle to the abdominal wall or the base of the thumb can be divided and the substituted tissue trimmed into position. This means a somewhat prolonged hospitalization for the patient, but this is more than justified when, in most instances, one can restore 100 per cent function to the injured finger with a good cosmetic result. It cannot be too strongly stated that amputation of any part or all of the hand is too frequently done and should be avoided if at all possible.

The following four cases serve to illustrate some of the principles outlined above.

#### CASE REPORTS

*Case 1.* Several hours before admission to the hospital, this 68 year old housewife was wringing out clothes on an automatic washing machine when her right hand became tangled in a bed sheet and was dragged into the wringer. The hand was dragged in up to the wrist and fortunately she was able to remove it. It was seen that she suffered a very severe injury of the dorsum, with avulsion of the skin and subcutaneous tissue, multiple lacerations of the fingers, and the tendons exposed for a considerable distance

3. Op. cit.





Case 1. Figure 1. Injured hand as seen in operating room.



Case 1. Figure 2. Hand 2 hours after transfer of abdominal pedicle flap.

throughout their length. She was seen by her physician, who rendered first aid and referred her in the hope that amputation would not be necessary.

Her general physical examination revealed her to be in excellent condition, and, as may be seen in the photographs, there was an avulsed wound of the dorsum of the right hand exposing the tendons without their protective paratenon. She also had lacerations of the index and middle fingers. There was no evidence of fracture. She was taken to the operating room where, under light general anesthesia, the avulsed hand was extensively cleansed with soap and water, and irrigated with normal saline. The abdomen was likewise prepared for surgery. A pattern of the



Case 1. Figure 3. Final condition 4 months after last operation.

defect to be covered on the hand was cut and transferred to the abdomen, and a pedicle flap outlined according to this pattern. It was possible to close the abdominal wound primarily, and the graft was sewed into the dorsum of the hand. Immobilization was carried out with a very extensive padded dressing of adhesive tape and Elastoplast, and she was returned to the ward in good condition. The pedicle was divided three weeks following operation, trimmed roughly into position, and she was discharged from the hospital. As may be seen in her final photograph, there is still excessive fat on the back of the hand resulting from her rather thick abdominal wall, but she does not wish to have this trimmed away inasmuch as cosmetic appearance does not bother her, and she is perfectly satisfied with the function in the hand.

**Case 2.** This 44 year old colored man injured his left middle finger about thirty minutes before admission to the hospital. He had set a heavy iron pipe into crane hooks, and, as the pipe was being lifted slowly into the air, one of the hooks became dislodged and the pipe fell on to the pulp of the middle finger of his left hand. This portion was torn and crushed completely away, leaving the terminal phalanx bare and the insertion of the profundus tendon exposed. He was given immediate first aid by the application of a pressure bandage and was sent to the hospital from the factory dispensary with a recommendation for amputation through the second phalanx. He was seen first by the chief company physician who requested our consultation.

The general physical examination was entirely



Case 2. Figure 1. Complete avulsion of distal phalanx of middle finger shortly after accident.



Case 2. Figure 2. Lateral view three months after pedicle flap repair.

within normal limits with the exception of the left hand. As may be seen in the photograph, the skin of all of the flexor surface and a portion of both lateral surfaces of the middle finger of the left hand was absent, revealing an intact flexor profundus tendon and an uninjured distal phalanx. The finger could be completely flexed down



Case 2. Figure 3. Palmar aspect of finger three months after repair.

into the palm and the nail did not seem to be involved.

He was taken to the operating room and, before he was anesthetized, the left hand was laid across his abdomen and a comfortable position found for it in the right lower quadrant. He was then anesthetized and the hand scrubbed with soap and water, ether and Zephiran. The abdomen was treated in a similar fashion. The avulsed wound edges of the fingers were excised to normal tissue. With the hand lying across the abdomen in the predetermined position, a pedicle flap based superiorly was raised, bleeding was controlled, and the abdominal wall closed primarily. The flap was then carefully sutured into position on to the flexor, radial and ulnar surfaces of the defect of the middle finger, and the hand and arm were immobilized in that position without tension, using an extensively padded Elastoplast and adhesive dressing. The patient was returned to the ward in good condition.

His postoperative course was entirely uneventful, and eighteen days following transfer of the flap it was divided under local anesthesia. In this particular case, we allowed time for complete shrinkage to take place before final trimming was carried out, so that no further operations on the finger would be necessary. During the interim between the second operation and the final one, active and passive motion was encouraged, and one week following his second operation the divided pedicle flap was trimmed of as much of its fatty tissue as possible without interfering with blood supply. The flap was then bent on itself and sutured into position around the tip of the finger underneath the fingernail. All the excess fat could not be removed at this operation. He got along very well following this, was shortly



discharged from the hospital and from our care approximately five weeks following his injury. The finger could be flexed completely down into the palm and could be fully extended. On subsequent visits, it was seen that sensation had returned to the flap and its final function could be judged as perfect. The cosmetic appearance could be improved by removal of a bit of the excess fat, but he is not in the slightest interested in such a procedure, and has been carrying out his usual activities since two months after his injury.

**Case 3.** Some twenty-five days prior to admission to the hospital, this 31 year old white male received a cut in a linear direction on the palmar surface of the first phalanx of the right thumb. He was taken to a physician who sutured the wound. At the time of the first dressing four days later, it was noted that he did not have flexor action in the thumb and it was recommended that this be repaired. He was seen by us nine days after his accident, at which time the thumb was greatly swollen with a poorly healing incision. It was recommended that he wait for a period of three weeks when a delayed repair would be done and a tendon graft used.

His general physical examination was entirely within normal limits with the exception of his right hand. Examination revealed a scar on the palmar surface of the first phalanx of the thumb running its entire length. There was complete inability to flex the distal phalanx of the thumb, and he was unable to touch the thumb to the small finger. It was noted that he had a well developed palmaris longus tendon. At operation, which was carried out under general anesthesia, with the use of a pneumatic tourniquet around



Case 3. Figure 1. Patient is attempting to flex distal phalanx of thumb.



Case 3. Figure 2. This shows inability to flex thumb to 5th finger.



Case 3. Figure 3. Following tendon graft joint flexion is within normal limits.

the upper arm, a mid-lateral incision was made on the right thumb extending from proximal to the nail to the metacarpo-phalangeal joint and carried down to the periosteum. The distal stump



Case 3. Figure 4. After graft thumb and index finger are easily approximated.

of the flexor tendon was readily found. There was considerable scar tissue which was gelatinous in quality and which was removed. A careful search was made in the thumb for the proximal stump. This could not be found here but by means of a transverse incision along the flexion creases of the wrist, the yellow, swollen tendon was located. This was brought into the operative field. It was obvious that it would have to be sacrificed because of disease. The palmaris longus tendon was then identified through a tiny counter incision up the forearm. Six inches of this tendon were sacrificed to be used as a graft. The distal thumb tendon was sacrificed and the bone scarified in the area of attachment. The tendon graft was threaded through the thumb tunnel using the Bunnell guide, and No. 30 stainless steel wires were used for the pull-out wire technique. The tendon was anchored to the distal phalanx over a button at the base of the thumb-nail with a pull-out wire. The diseased portion of the proximal stump was discarded and a tendon anastomosis made at the wrist by interweaving the graft with the long flexor. The graft was then placed under slight tension so that the thumb was put in a position of function in abduction and flexion. The usual postoperative care was given. On the nineteenth postoperative day the cast was removed, and it was seen that he had definite flexor movement of the distal phalanx of the thumb. On the twenty-sixth postoperative day, the pull-out wire sutures were removed, and he was given careful instructions as to physiotherapy. He had 80° flexion in the interphalangeal joint. The strength of the thumb was good, and he was able to carry out his usual activities.

Case 4. Approximately six weeks before this seventeen year old girl was seen by us, she was attempting to turn on a water faucet when the porcelain handle broke off, cutting her hand perpendicular to the skin crease separating the thenar eminence from the palm of the hand in its middle third. This was a short laceration, but hemorrhage from it was severe. The wound was cleansed and sutured by her local physician, and healed uneventfully. She noticed loss of sensation in the thumb, index and middle fingers, and found that she was unable to flex the finger properly. It was obvious that she had received a compound nerve and tendon injury, and was admitted to the hospital for repair of this.



Case 4. Figure 1. This patient is attempting to flex her thumb and extend index finger. Early trophic changes may be seen.



Case 4. Figure 2. After operation function is nearly normal, and the two fists are almost identical.

On physical examination no abnormalities were found with the exception of the right hand. There was a short transverse scar across the hand crease as described above. The index finger was held in flexion and could not be fully extended. The skin of the thumb, index and middle fingers distal to the injury was shiny, thin, and had the characteristic appearance following loss of adequate sensory nerve supply. She was unable to flex the distal joint of the thumb, and there was



some anesthesia to light touch and pin prick over the classical median nerve distribution.

At operation under general anesthesia and using a pneumatic tourniquet, an incision was made so that a flap could be turned back on the hand and likewise on the wrist. The volar carpal ligament was divided, and the median nerve identified and followed down to where it became bulbous and ended in a mass of scar tissue. The motor branch to the muscles of the thumb was seen and preserved. All scar tissue was dissected free, and it was possible to dissect out the terminal branches of the nerve, four in number, involved in a mass of scar. Attention was then directed to the tendons, where it was seen that the flexor sublimis to the index finger had been severed and there was an adhesion between this and the intact profundus. This was stripped away using the Bunnell strippers, and the sublimis tendon was sacrificed. The flexor of the thumb was found to be cut low down in the thenar eminence. This was not a complete laceration, but there was considerable scar tissue around the tendon in this area. This was removed, the tendon sacrificed back to normal tissue, and a direct tendon suture done. The neuroma of the nerve was resected until normal tissue was seen, and by flexing the hand slightly at the wrist, it was possible to perform a nerve anastomosis, using 6-0 black silk and gathering the four branches together with a perineurium suture so that one bundle could be sutured to the proximal stump. After wound closure a vaseline gauze pressure dressing was applied with the wrist held in 60° flexion and the thumb and fingers in a position of function.

Her postoperative course was entirely uneventful, and the cast was removed nineteen days postoperative to reveal all wounds cleanly healed. Active and passive motion was encouraged, and, during the succeeding months, she got progressive return of sensation in the thumb, index and middle fingers. When last seen six months after operation, it was noticed that she was sweating almost to the tips of the index and middle fingers and was sweating in the tip of the thumb. There was light touch sensation in some areas of the tips, but some misinterpretation of findings. She had definite pain response throughout all fingers and was doing well. She had resumed her typing at the previous rate of speed and could play a piano well, though she said not quite so well as formerly. Thumb action was entirely normal, and the index finger action was good, though the distal phalanx could not be flexed more than 75°.

#### SUMMARY AND CONCLUSIONS

A program for the management of some acute hand injuries is outlined.

Some general principles regarding reparative and reconstructive hand surgery are discussed, and the various methods of management of some common injuries are presented.

Case reports illustrating these principles are shown.

## MANAGEMENT OF FERTILITY PROBLEMS

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Considerable progress has been made in the study of sterility problems in the past few years. This has been due to the fact that attention has been directed both to the husband and wife rather than just to the wife as was formerly the policy in infertile marriage.

#### GENERAL CONSIDERATIONS

Studies of infertile couples are usually first investigated in the office of the family physician. How much of their problem he may wish to investigate will depend on his interest and knowledge of fertility and sterility studies. He should intelligently direct his efforts lest he waste his patient's time and money, as there is scarcely a subject of medicine more demanding of a detailed knowledge than a sterility investigation.

The extent of infertility is amazing when

one realizes that 10 to 15 per cent of all married couples are involuntarily sterile. It is estimated that of most infertile couples who are properly evaluated and treated about one-third may ultimately achieve a pregnancy. In an adequate investigation it is possible to uncover defects that may account for the infertility.

Most married couples who lend their efforts to this purpose usually achieve a pregnancy during the first year. After the first twelve months the percentage drops off until, after two to three years of attempting to achieve a pregnancy, the percentage of unaided success is very small. A problem of infertility over one year's duration should have had adequate time for the usual achievement of a pregnancy. A complete investigation of both husband and wife should be considered without further delay.

#### ROUTINE INVESTIGATION OF THE WIFE

Usually the wife is the one who comes to

the family doctor because of the couple's infertility problem. Proper evaluation and orientation of the infertility problem should be undertaken. This is done by obtaining a careful history and physical examination on the wife's first visit. The history should include a detailed menstrual history, noting any bleeding difficulties; any increased vaginal discharge, itching or irritation; and any past illnesses such as tuberculosis, diabetes, syphilis, gonorrhea, high fevers, mumps or other infectious diseases which may have affected genital function. Marital history should include any previous pregnancies, previous marriages, contraceptive practices and coital habits. Important facts may be elicited concerning habits of diet, sleep, use of alcohol and tobacco, amount of exercise, and any previous sterility investigation. Detailed information should be recorded about any abdominal operation, what organs were involved or removed, ruptured appendix or previous pelvic infection. A complete general physical examination, including inspection of the cervix and a careful bimanual evaluation of the pelvic organs, should be done.

Usually at this visit routine laboratory studies should be made, which include examination of the urine, blood, serology and vaginal secretions.

At this time the extent of the studies and cost of the complete investigation should be discussed. There are several books available that are excellent for the couple to read.

#### ROUTINE EXAMINATION OF THE HUSBAND

Since recent statistics suggest that the husband may be an important factor in 40 to 50 per cent of all infertile couples studied and because of the relative ease with which estimation of male fertility can be made, the husband should be checked before any special tests are run upon the wife. Essentially this should consist of a complete history and physical examination, including routine laboratory studies and semen examination. The history should include his early developmental history; any factors affecting testicular function, such as mumps, orchitis, high fevers; venereal diseases, such as gonorrhea or syphilis; testicular injuries, operations on the genitalia or hernia operation which might compress the vas deferens, undescended testicles, difficulties of erection, ejaculation or any change in sexual interest or desire.

The physical examination should be complete, including blood pressure determina-

tions and examination of the external genitalia and prostatic gland. Routine laboratory work should be done and semen examinations made. The semen should be collected by the patient in a clean, wide-mouth bottle after a three-day period of continence. Since condom or withdrawal specimens are unreliable for study, the specimen is best obtained by the patient himself. If possible the specimen should be examined within one to two hours after collection. Where it is not possible to examine the specimen immediately, a few crystals of thymol may be placed in the semen, thus allowing it to be mailed or kept at room temperature for several days. Of course the sperm are killed immediately but bacterial contamination is prevented from ruining the specimen until it can be examined.

No evaluation of semen qualities will be attempted here as there are many excellent references available elsewhere.

Unless marked difficulties are found in the husband that would almost preclude the possibility of his aiding conception, further special studies of his wife are now in order.

#### SPECIAL STUDIES

Many patients who consult their doctor for sterility problems are given a cursory examination and told that no reason exists why the patient should not get pregnant, since no demonstrable lesions are present. This is gross mismanagement of a sterility problem since there are many factors that cannot be evaluated by a pelvic examination alone. Special studies are needed to evaluate properly the cause of infertility. These studies aid in tracing the problems of the infertile couple from the production of sperm in the male to the deposition of sperm in the vagina, the passage of sperm through the cervical mucus and fallopian tubes, and the evaluation of ovarian function with the production of an egg.

One of the more useful special studies is the basal temperature chart which may be used to aid in determining if ovulation occurs, to ascertain the approximate time of ovulation, and to aid in the timing of coitus in relation to the expected time of ovulation. This test is accomplished by having the patient take her oral or rectal temperature for five minutes every morning on first awakening and graphing this on a properly prepared chart. This must be repeated month after month.



One of the most important factors in the female that is often overlooked is to check on the ability of sperm to penetrate the cervical mucus at the time of ovulation. Only at this time is the cervical mucus abundant, clear and penetrable by sperm. This test is performed by examining the patient, who has previously been instructed not to use a douche at any time and to come in from two to eighteen hours after coitus. After cleansing the cervix with a sponge, a long pipet is inserted far into the cervix to obtain a specimen of mucus. It should be abundant, clear, of low viscosity and contain very few leucocytes. When the husband's sperm count is average or better, usually one should expect five or more sperm per high power field. Any increased viscosity, increased leucocytosis, or decrease in volume of mucus may suggest infection, hypothyroidism or hypo-estrogenism.

Among special examinations that may aid in the diagnosis of infertility in the wife the tubal patency examination is important from a diagnostic and a therapeutic standpoint. There are two types of tubal patency tests. The simplest and least expensive method is the use of carbon dioxide gas if proper equipment is available. The end point revealing that one or both tubes are patent is the presence of a referred pain to the shoulders or arms soon after the patient sits up. The introduction of an opaque oil to outline the uterus and tubes requires very little equipment other than a cannula and syringe but an x-ray or fluoroscope must be available. Iodochloral, which has been a satisfactory iodized oil when injected through the cannula, will outline the uterine cavity and tubal lumen and show the scatter of oil throughout the pelvic cavity. The introduction of oil may be visualized by use of the fluoroscope or by serial x-rays taken immediately and again after six to twenty-four hours.

Tubal patency tests should be scheduled several days after the menstrual period is over and as close to ovulation as possible since this very often has a favorable effect if pregnancy is attempted during the following ovulation period.

Many times where the patient's periods are irregular it is difficult to ascertain whether ovulation has taken place even though basal temperature charts are being used. Endometrial biopsies are valuable in this respect if the test is taken during the

first eighteen hours of the menstrual flow. In patients where the problem is habitual abortion it may be valuable to take the endometrial biopsy on the twentieth to the twenty-fourth day to see if the endometrium is suitable for nidation.

#### TREATMENT OF THE INFERTILE COUPLE

Treatment of the infertile couple should begin with improving their general health by insisting on adequate exercise, a well balanced diet, plenty of sleep, curtailment of excessive smoking or alcohol consumption, removal of any toxic contacts, and so forth.

In even borderline hypothyroid states the giving of adequate thyroid therapy to a male or female has often resulted in a pregnancy. Many patients are put on thyroid empirically when their only complaint is infertility.

A very important therapeutic point is to clear up any chronic cervicitis by removal of the infected tissue, administration of antibiotics and, later, the use of cauterization where necessary.

Dilatations of the internal os may relieve cervical spasm and allow the free passage of sperm up into the uterus at ovulation time. This possibly accounts for many of the pregnancies that occur after a curettage. However, the removal of the static portions of the endometrial bed or a polyp may freshen up the surface and allow implantation to occur.

Dysfunction of the ovary is difficult to diagnose and harder to treat. It is doubtful that successful therapy can be accomplished very often in persistent anovulatory menstruation. In patients where relative hypofunction occurs due to poor function of the corpus luteum or even occasional anovulatory cycles, alternate suppression of ovulation may cause a rebound and release phenomenon, with increased corpus luteum function and possible achievement of a pregnancy.

Such things as special precoital douches, concentration of coitus around ovulation, and the use of a cervical cap to protect semen low in volume or count are of doubtful value but may be tried.

In the male, chronic infection in the genital tract should be eradicated. Thyroid medication may help when clinically indicated. General measures to build up the health as previously outlined should be instituted. Especially, tension producing situations in

business should be avoided where possible. Some patients with low sperm counts have been helped by the suppression of spermatogenesis, using large doses of testosterone over a several months' period, with a later rebound to higher count levels taking place many months afterwards.

The psychologic problems that are nearly always encountered in the infertile couple are very real and often constitute major difficulties in handling their case. Many times after a complete survey has been finished and there is evidence that some major difficulty exists, it is well to suggest that the couple plan to adopt a child rather than allow tension to build up before they make this decision.

#### CONCLUSION

The percentage of couples who finally achieve a pregnancy is not at present satisfactory. Possibly twenty-five per cent of the couples studied may be aided in achieving a pregnancy. Another twenty-five per cent may have difficulties that prevent their becoming pregnant but through persistent and intelligent efforts progress may be made in helping them with their problem. In the remaining fifty per cent the difficulty may be so profound or absolute that under present day methods of therapy serious doubt exists that they may ever be helped.

New studies are constantly being made, with new methods of diagnosis and therapy evolving all the time. Couples who were studied without success in the past may now or soon be able to achieve their goal.

## BLOOD GROUPS IN RETROLENTAL FIBROPLASIA

### A REVIEW OF THE LITERATURE

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Retrolental fibroplasia is a condition usually occurring bilaterally in premature infants and unilaterally in full term infants. It is characterized by a gray pupillary reflex; retrolental vascular membrane; microphthalmos; shallow anterior chamber, with anterior synechiae, a feature of which predisposes the eye to the development of secondary glaucoma; remains of anterior pupillary membrane; spheroidal lens, and searching nystagmus. All the babies in the present series have the deep-sunken eyes and a discoloration of the lids such as is noted in adults after prolonged exertion without proper rest.

The first reference to this condition that I could find was made by Howard in 1852. Since then the various clinical and pathologic aspects of the lesions have been described under various synonyms, among which are the following: persistent thickened hyaloid artery with secondary changes (Nettleship, 1873), persistent hyaloid canal and artery (Gardiner, 1880), persistence and thickening of the posterior fibrovascular sheath of the lens (Collins, 1894; Pollock, 1923), atypical development of the anterior

part of the vitreous with or without persistence of the hyaloid artery (Collins, 1892), congenital membrane behind the lens (Parsons, 1902), persistence of the remains of the tunica vasculosa lentis (Bruckner, 1907), persistence of the posterior fibrovascular sheath of the lens (Lane, 1919), persistence of the embryonic fibrovascular sheath of the crystalline lens (Lent and Lyons, 1922), remains of the tunica lentis (Gifford, 1923), pseudoplakia fibrosia of Czermak (Lloyd, 1931), opaque membrane behind the lens (Fuchs, 1923), shrunken fibrous tissue cataract (Collins and Matou, 1925), posterior lenticonus (Collins), congenital connective tissue formation in the vitreous chamber, posterior polar cataract, persistent vascular sheath of the lens, fibroplastic overgrowth of the persistent tunica vasculosa lentis, retrolental fibroplasia, and persistent primary vitreous.

#### ETIOLOGY

Terry believed the disease developed after birth from the abnormal persistence of the embryonic blood vessels of the lens; while Krause, Reese and Payne thought the disease was present at birth. Owens and Owens observed the progress in the development of the membrane. The first changes are observed when the babies are approximately four weeks old. The earliest abnormalities



are seen in the retina and the blood vessels. The retinal veins become greatly dilated and the retinal arteries become tortuous. This is followed by localized or generalized swelling and infiltration of the retina which often becomes so extensive that the course of the retinal vessels cannot be followed in the areas of the greatest retinal edema. The vitreous usually becomes cloudy. Localized bands arise from areas of proliferative retinitis and extend into the vitreous. This is followed by extensive retinal detachment and the formation of a complete retrolental membrane by the fusion of the vitreous bands and peripheral folds of detached retina. In these eyes all vision and light perception are soon lost. The complete membrane is formed by the time the baby is four months old.

Occasionally the disease becomes arrested at the stage in which only a partial membrane had formed behind the lens. In these eyes bands resembling retinal folds extend through the vitreous to localized areas of retinal detachment. Partial vision is usually retained. The membrane may be complete in one eye and incomplete in the other.

Owens and Owens felt that as the disease began developing about the fourth week of life then some metabolic abnormality should be the cause. Vitamin E had not been added to the diet of prematures. Vitamin E plays an important role in protecting or stabilizing unsaturated fats during their mobilization. They supplemented the diets with a water miscible preparation d-1 alpha tocopheryl acetate, a form of vitamin E. They do not feel as encouraged as they did during the first publication.

It seems that the disease has been found more frequently than elsewhere in Boston, New York, and Chicago. Over one hundred premature babies were studied in New Orleans and no case was found. Very few cases have been found in Europe. A few cases have been found in Australia. One ophthalmologist thought that, as this is an American disease, the possibility of a too high concentration of oxygen might be the cause; while a group in East St. Louis thinks it can produce the condition and have regression with varying amounts of oxygen.

During 1946 and 1947 the premature babies in the Strong Memorial Hospital were studied, with the collaboration of the pediatric service. There were 314 premature infants: 44 were stillborn and 47 died

within the first forty-eight hours after birth, leaving a total of 223 for study. All these babies weighed less than 2,500 Gm. This diagnosis of retrolental fibroplasia was made for 12 babies, 2 of whom were from other hospitals, an incidence of 4.3 per cent in premature babies of less than 2,500 Gm. When the babies who weighed less than 1,500 Gm. were included, there were 77. Of these, 34 were stillborn, and 20 died during the first 48 hours of life and the eyes were not examined. Of the 23 babies in the study who weighed less than 1,500 Gm., seven or 30.4 per cent had the defect. Thus, the more premature the infant, the more likely is retrolental fibroplasia to be present. I have studied the blood groups in 6 of the 12 cases in the baby, mother and father.

Szewczyk observed that the condition occurred in one of twins and triplets who was the larger and healthier. The amazing thing was that the less likely to survive baby did not develop the disease. The only difference in care was the administration of oxygen for a longer period of time to the weaker child. He observed that the first and second stages develop in babies after suddenly removing them from an oxygen environment of 60 to 80% to one of 20 to 25%. These changes could be reversed if the infants were returned to higher concentrations of oxygen. He concluded that a child who has been subjected to high concentrations of oxygen for any prolonged period of time must undergo a period of acclimation similar, in some respects, to that an adult experiences when he passes from a low to a high altitude.

There is sufficient evidence to indicate that prematures do have a relative oxygen deficiency, and that they do benefit from oxygen administration. The oxygen deficiency may be caused by: (1) subnormal pulmonary ventilation; (2) thickened alveolar walls; (3) presence of a fetal hemoglobin which takes up oxygen more readily than adult hemoglobin, but releases it less readily to the tissues; or (4) anemia of prematurity.

There is also evidence to show that anoxia of itself can cause vascular damage and hemorrhage. Postmortem studies of infants dying of severe oxygen deficiency, as in asphyxia, show generalized petechial hemorrhages. His conclusions were that (1) retrolental fibroplasia is a terminal stage of a disease induced by: (a) failure to keep an

oxygen deficient child for a sufficient length of time in an oxygen enriched environment, and (b) failure to acclimate a child slowly to a normal oxygen environment; and (2) retrolental fibroplasia is a terminal stage of anoxic retinopathy.

REPORT OF CASES

*Case 1.* S. M. was first seen when she was 3 months old. Her mother had observed that the baby did not follow moving objects as had her five siblings at the age of two weeks. S. M. weighed 1,500 Gm. at birth. There had been no illness or complications during pregnancy. The baby's blood was Rh negative, type OM, while her mother's blood was Rh positive, type OM. The father's was Rh negative, type OM. All had negative Wassermann reactions.

*Case 2.* B. Y. was the sixth baby. Her brother and sisters had normal eyes. Her weight at birth was 1,300 Gm. The mother had had no complications or illness during pregnancy. The diagnosis was made by a pediatrician in September 1946 when the baby was 3 months old. Ophthalmologic examination, with the infant under anesthesia, showed in each eye a shallow anterior chamber, anterior pupillary membrane, irregular pupil, and a definite vascular membrane on the posterior surface of the lens. Tonometric readings (Schoitz) showed 18 mm. in the right eye and 20 mm. in the left eye.

*Case 3.* M. R.'s mother had had two normal children before this patient's birth. However, she had had a spontaneous abortion before and one after the birth of this baby. The child was seen when she was about 2 years old. Her ocular condition had been diagnosed as cataract. Her weight at birth was 1,150 Gm. On Oct. 7, 1946, examination, with the child under anesthesia, showed very shallow anterior chambers. The pupils dilated to 5.5 mm. with 1 per cent atropine sulfate; tension (Schoitz) was 50 mm. in each eye. A thick vascular membrane was observed posterior to the lens of each eye. The patient's blood was Rh positive, type OMN; the mother's, Rh negative, AM type, and the father's Rh positive, OMN type.

*Case 4.* K. M., a first baby, weighed 1,300 Gm. at birth. The mother had observed that the infant had poor vision when he was 3 months of age. Examination in April 1947, with the child under anesthesia, showed a

bilateral shallow anterior chamber, pupillary membrane, and dense vascular retrolental membrane, and the intraocular pressure was 26 mm. (Schoitz) in each eye. The patient's blood was Rh positive, type BMN; the mother's Rh negative, type A<sub>2</sub>BMN, and the father's Rh positive, type A.

*Case 5.* R. B. was one of twins, whose weight at birth was 1,575 Gm. The mother had had a threatened abortion during the second month of pregnancy after an automobile accident. Examination, with the baby under anesthesia, showed a very shallow anterior chamber bilaterally; and the retrolental membrane was denser temporally and clearer nasally in each eye. The hyaloid artery and vein could be observed between the membrane and the optic disc. The intraocular pressure was 30 mm. in the right eye, and 35 mm. in the left eye (Schoitz). The patient's blood was Rh positive, type A<sub>1</sub>MN; the mother's Rh positive, type OMN, and the father's, Rh positive A<sub>1</sub>MN. The diagnosis was made when the child was 18 months of age.

*Case 6.* K. M., a first baby, weighed 1,550 Gm. at birth. The diagnosis was made at 6 months of age. On Feb. 1, 1947, examination, with the patient under anesthesia, showed a shallow anterior chamber and a posterior synechia, an intraocular pressure of 20 mm. (Schoitz), and a dense, vascular retrolental membrane in each eye. The patient's blood was Rh positive, type O, while the mother's was Rh positive, type A, and the father's, Rh positive, type O.

*Case 7.* J. E., first baby, weighed 1,000 Gm. at birth. The condition was diagnosed when the infant was 3 months of age. Examination, with the child under anesthesia, showed intraocular pressure of 40 mm. (Schoitz) in each eye, shallow anterior chambers, and a small retrolental membrane temporally with a falciform fold of retina in each eye. There was a coloboma of the optic nerve in the left eye. The patient's blood was Rh positive, type BMN.

*Case 8.* D. A., a third child, weighed 1,310 Gm. at birth. The other children had normal eyes. The mother was epileptic and had had influenza two weeks prior to delivery. The infant's condition was diagnosed at the age of six months. Examination, with the patient under ether anesthesia, showed small eyes, with shallow anterior chamber, persistent anterior pupillary membrane, and dense, vascular retrolental membrane; the



intraocular pressure was 40 mm. (Schoitz) in each eye. One drop of 1 per cent pilocarpine nitrate was given twice a day. Roentgen radiation, in a dose of 100 r at monthly intervals, was given for four months. Six months after treatment was started there was some nasal clearing of the membranes. Vision remained limited to light perception only. Studies of the blood were not completed.

DATA ON 6 INFANTS WITH RETROLENTAL FIBROPLASIA

| Case             | Blood Type | Rh Factor | Wasser-mann Reaction | Total Dose of Roentgen Radiation |
|------------------|------------|-----------|----------------------|----------------------------------|
| 1. Patient S. M. | OM         | —         | —                    | 1,400 r                          |
| Mother           | OM         | +         | —                    |                                  |
| Father           | OM         | —         | —                    |                                  |
| 2. Patient B. Y. | OM         | —         | —                    | 300 r                            |
| Mother           | OM         | +         | —                    |                                  |
| Father           | OMN        | —         | —                    |                                  |
| 3. Patient M. R. | OMN        | +         | —                    | 300 r                            |
| Mother           | AM         | —         | —                    |                                  |
| Father           | OMN        | +         | —                    |                                  |
| 4. Patient K. M. | BMN        | +         | —                    | 500 r                            |
| Mother           | A.BMN      | —         | —                    |                                  |
| Father           | A          | +         | —                    |                                  |
| 5. Patient R. B. | A.MN       | +         | —                    | None                             |
| Mother           | OMN        | +         | —                    |                                  |
| Father           | A.MN       | +         | —                    |                                  |
| 6. Patient K. M. | O          | +         | —                    | None                             |
| Mother           | A          | +         | —                    |                                  |
| Father           | O          | +         | —                    |                                  |

Case 9. F. R., a first baby, weighed 1,620 Gm. at birth. The child's condition was diagnosed at the age of 5 months. There was no toxemia or complications of pregnancy. Examination, with the patient under anesthesia, revealed a typical picture. The intraocular pressure was 12 mm. (Schoitz) in each eye. Blood studies were not completed.

Case 10. P. M. was one of double ovum twins; the weight at birth was 1,400 Gm. The child was the product of the mother's fifth pregnancy. The other children had normal eyes. Examination, with ether anesthesia, revealed a typical picture. The family moved to California, and blood studies were not made.

Case 11. B. M., a twin of the baby in case 10, weighed 1,200 Gm. at birth. The findings were similar to those in case 10.

Case 12. Studies in this case have not been completed.

DIFFERENTIAL DIAGNOSIS

The following conditions must be considered in differential diagnosis: 1. Retino-

blastoma. This intraocular tumor is most commonly observed in children less than 6 years of age. It is usually unilateral at first, but may be found bilaterally. Ophthalmoscopic examination shows a yellowish mass, usually in the posterior half of the globe and definitely separated from the lens. On transillumination the tumor appears dark, indicating that light does not pass through it readily. The eye is normal in size or slightly enlarged. If the baby is seen after the tumor has progressed, the eye appears enlarged and congested with purulent material in the anterior chamber, which may lead to the mistaken diagnosis of panophthalmitis. One should always suspect the presence of a retinoblastoma unless a definite history of penetrating injury is given.

2. Serious detachment of the retina. The eye is usually smaller than normal or of normal size. Ophthalmoscopic examination shows a grayish mass, slightly tinged with yellow, situated away from the lens. The readiness with which it may be transilluminated shows that only fluid is behind the retina.

3. Congenital cataract. The lens is opaque in varying degrees, and the anterior chamber is normal.

4. Retroental fibroplasia. The lens is clear, but a dense membrane is observed just behind the lens. Blood vessels are always seen on this membrane if observed carefully. The anterior chamber is shallow, and the iris appears close to the cornea. The pupil may or may not be irregular in outline, according to whether or not adhesions have formed. Small strands and remnants of pupillary membrane, like a spider web, can be observed passing across the pupil.

SUMMARY

A study of the possibility that a blood factor is a cause of prematurity in the congenital malformation led to no definite conclusion. Further studies of this type at several medical centers, with possibly a central registry, might bring useful information to light.

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lental Fibroblastic Overgrowth of Persistent Tunica Vasculosa Lentis, *ibid.* 33: 203-208 (March) 1945.

**Upper Extremity Amputations**—Since it is impossible and impractical to provide all the functions of the hand by an artificial replacement, the greatest conservation of tissue is necessary in all amputations through the digits and metacarpal area. Often what initially appears to be a useless hand, with time and treatment, will become a functional member. A two-digit hand with sensation and pinch is functionally more satisfactory than any known artificial terminal device. Even a single functional digit, particularly a thumb with sensation, can be made more serviceable than a complete artificial replacement.

The carpus and the distal end of the forearm have often been sacrificed because it was believed that the circulation of the long stumps was inadequate, and that the ends of the stumps were too tendinous and bulbous to fit with a prosthesis. These tenets are not considered valid. The surgeon should not sacrifice this length to fit a conventional prosthesis. When the circulation is otherwise adequate and there is a functional range of motion in the wrist, the carpus should be retained, because this flexion, extension, pronation, and supination is of value to the patient and can be fitted functionally.

Wrist disarticulation amputations allow better pronation and supination than any amputation at a higher level if the radio-ulnar articulation is not disturbed. We do not remove the styloid processes. If there is limitation of motion at the distal radio-ulnar articulation, amputation proximal to this joint may be necessary to produce some pronation and supination. Pronation and supination decrease with the height of the amputation through the forearm.

Short below-elbow stumps, although not capable of actively flexing and extending the forearm sections of the prosthesis with a work load, do assist in these functions and should be retained. They provide lateral stability, prevent rotation, and give better control of the prosthesis. Even when not wearing a prosthesis, such functions as resting the elbow on a chair or bed, pushing through a crowd, or carrying an article under the arm, are appreciated by the amputee.

Elbow disarticulations provide some of the advantages of the short below-elbow stumps. The distal end of the humerus should not be needlessly sacrificed to make the prosthetic fitting easier. The longer the above-elbow stump, the better is the control of the prosthesis. Even short above-elbow stumps should not be sacrificed, as some of them will allow shoulder movement in the replacement or at least help support the shoulder cap.

A bone graft may be performed to lengthen the stump in the arm or forearm when the soft parts and skin flaps are adequate. Skin grafts may be used to fill in defects in non-pressure areas to retain an otherwise good stump in the upper extremity. Large areas of split-thickness or full-thickness grafts are not warranted since they do not sustain the pressure of prosthetic wear.—*Batch and Spittler, South. M. J., June '53.*



# THE JOURNAL

of the

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## BLUE CROSS RECIPROCAL BENEFITS

More than 470,000 Blue Cross subscribers who have been hospitalized while traveling have received hospital service benefits through Blue Cross Plans other than their own, it was announced at the 1953 Annual Conference of Blue Cross Plans. This has been made possible by a mechanism called the Inter-Plan Service Benefit Bank, an agreement among the Plans under which they furnish reciprocal benefits to one another's members. Total hospital care purchased for members in this way has amounted to \$46,000,000 to date.

These figures cover the three and one-half years since the Bank has been in operation, it was explained. Inaugurated in 1949 as an experimental project, the program has proved to be a workable instrument for providing service benefits to subscribers of one Plan when hospitalized in a member-hospital of another Plan.

Formerly, if a subscriber entered a hospital outside of his own Plan's area, he usually received only a fixed daily cash indemnity. Now he receives the complete benefits, in terms of hospital services, of the Plan in whose area he is hospitalized. This reciprocal agreement among the Plans was entered into voluntarily, each Blue Cross Plan being an entirely independent local organization.

The 470,000 cases represent 3,450,000 days of patient-care. Use of the Bank has grown steadily; the number of cases handled in 1952 represented a 30 per cent increase over the previous year. Benefits last year totalled \$19,500,000.

The Bank is a clearing-house operation, managed in Chicago by the Blue Cross Commission of the American Hospital Association. The procedure in handling a case is a simple one: When a member of the Florida Blue Cross Plan, for example, is hospitalized in New York City, the hospital notifies the New York Blue Cross Plan, which pays the hospital for the member's care according to its own benefit schedule. The Bank office in Chicago then reimburses New York and charges Florida. Efficiency of operation is indicated by the fact that operating expense of the Bank in 1952 was only one fifth of one per cent of total funds handled.

## CANCER OF THE EYELIDS

Cancer of the eyelids, a dangerous disease because of its closeness to important structures, responds well to treatment by irradiation, according to a study made at the State University of Iowa Hospitals, Iowa City.

The results of the treatment of 102 cases were reported in the American Journal of Roentgenology, Radium Therapy and Nuclear Medicine, official publication of the American Roentgen Ray Society and American Radium Society, by Dr. Bertil Roseberg of the Rockford Memorial Hospital, Rockford, Illinois.

Dr. Roseberg pointed out that cancer of the eyelids may cause severe changes in the function of the eye and underlying tissues, and loss of vision in the involved eye and even loss of life may result.

He stressed the importance of preserving the function of the eye and its adjoining tissue while at the same time removing the cancerous lesion completely.

In the 102 cases covered in the study, four methods of irradiation were used with the following results: (a) radium therapy, 8 lesions treated, 3 (37.5%) healed; (b) intermediate roentgen therapy, 41 lesions treated, 36 (87.8%) healed; (c) deep roentgen therapy, 14 lesions treated, 12 (85.7%) healed; (d) low voltage, short distance therapy, 39 lesions treated, 36 (92.3%) healed. In some instances surgery also was used as a primary treatment.

The overall healing rate was 85.3 per cent—87 out of 102. All cases were followed for three or more years after the last treatment. Dr. Roseberg expressed the opinion that all recurrences will develop within three years following initial treatment.

Sixty-six lesions received only a single course of treatment in the Iowa Hospitals, the report said.

"Increase in experience resulted in increase in the total doses administered with resultant increase in the percentage of lesions healed," Dr. Roseberg said. "This is exemplified by the better therapy. We also believe that using low voltage, short distance therapy improved the cosmetic results and decreased the number of complications."

Included in the study were cancerous growths within 3 mm. (approximately one-eighth of an inch) of the corners of the eye but not on the lids. It was found that 54.9

per cent of the lesions were on the lower lid, 11.3 per cent on the upper lid, 25.6 per cent near the inner corner and 8.2 per cent near the outer corner.

The most common type of cancer of the eyelid may develop either as a small non-ulcerating lump with or without a central depression, or it may begin secondary to a keratosis, a horny growth, which usually ulcerates early.

There are few subjective symptoms until the lesion has reached 8 to 10 millimeters (about .3 or .4 of an inch) in size and has involved other parts. The patient may then complain of a scratching or burning sensation, reddening of the eye or increased flow of tears. Because of the mild symptoms and slow-growing nature of the tumor, patients frequently delay seeking medical aid.

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## IT'S A SLOW PROCESS

W. A. Dozier, Jr.  
Director of Public Relations

As of July 1 the office of Public Relations Director for your Association will be five years old, and for the first time it seems that some measure of stock taking can be accomplished. The position was created for the purpose of carrying out a three-pronged job. First, an office had to be set up. This was relatively simple, although some problems arose from it. Second, a system had to be devised—a system that would work for you. Not knowing exactly where we wanted to go, we faced a more difficult proposition here. However, through trial and error and through a mixture of various duties, a system was set up and put into operation. Then the most important and most difficult part of the plan was to make it work.

For the first time since its inception, it seems safe to say that by and large the office is no longer on the defensive. It seems that it has become accepted and is turned to for various functions relative to the working of the Association. This statement does not mean that everyone is sold. Only recently a case was brought forth wherein one of the members said to another that he did not think the office or the Director did a blankety-blank thing. Doubtlessly there are others who feel the same way; and it will be years, if ever, before each member can be touched in the right manner to make of him a supporter of the work this office has done and is attempting to do. Even with these exceptions the first statement of this paragraph seems warranted.



In dealing with the profession itself the primary problem was and still is one of motivation and education. Both are slow processes, and both will have to continue for years to come. Neither can be accomplished with a pat answer, and neither allows a second's respite. This is not unique in organizational work for everyone who earns his salt in such an occupation is constantly faced with the same proposition.

Although some progress has been made during the last five years, the larger problem has hardly been scratched. The aim for this office and for the Association is and should be eventually to return the physician to his former position of respect in the eyes of the public. We have only just begun. The efforts of several years ago relative to socialization and the beginning work concerning the present state legislative picture have served their purposes. Some physicians have begun taking a more active part in civic affairs, and others have become more conscious of their obligations in this field. More need to do so.

To be really effective as some of the members envision such a program as being, the total membership will have to help. A few cannot carry the load for the others. Each in his own way and in his own locality must eventually do all that he can to make this program reach its ultimate goal. Many have had and still retain a certain reluctance toward assuming their proper positions in matters outside the profession. Part of this is due to training, part to overwork, part to fear of reproach, and part to oversight and negligence. Each must someday shed his reticence and strive to give more of his time and ability.

But no matter how you look at it, from the viewpoint of what has been accomplished and from the viewpoint of what still remains to be done, it is and always will be a slow process. Some people were not endowed with patience, and some seem to have no perseverance; but both qualities are necessary in this game. Education and motivation still remain as the ever present problems. To answer them properly, we must accept the slowness of change and face our problems with perseverance and patience.

**Medical Care**—To meet the needs of the people for medical care we must have a better distribution of doctors between the specialties and general practice, and between urban and rural areas. As electrification, telephones, and paved roads are making rural living more inviting, so must people who live in rural areas cooperate to make the practice of medicine in these areas more inviting and more satisfying. That is a community responsibility; and until rural people understand that they must support their local physicians and cooperate with them, there will be a shortage of country doctors, whether we graduate 6,000 or 12,000 medical students a year.

To be attractive to a young physician seeking a location, the rural community must be one which is characterized by wholesome living conditions and good environment, and which can afford economic support for a doctor and his family. The community must be educated to share in the responsibility of providing these attractions. It must be educated to use its physician and to look upon his services as essential to the welfare of the community. The tendency in many rural communities to make use of the local physician only in foul weather and for emergencies, and to go to the "city doctor" for other services, is discouraging young physicians from locating in rural areas, and in many cases is driving away physicians already in such areas. Several communities in this and other states have demonstrated that by cooperation in the provisions of clinic space and equipment, and in the support of their local physicians, they can attract and hold good doctors.

On almost every hand we hear that the crying need today is for more doctors trained in the general practice of medicine. The specialties are necessary and important adjuncts of medicine; but specialty practice does not answer the basic need of people in towns and rural communities today. The burden of caring for the health needs of the people rests squarely on the medical profession. We cannot discharge that obligation by a system of specialized medical practice in which only a few doctors can be found who are able and willing to assume responsibility for the everyday and everynight problems which constitute 80 per cent or more of medical practice. I suggest that the difficulty many people now claim to have in securing medical attention at a price they can afford to pay and at an hour that meets their needs and conveniences may be one of the reasons for the favorable reception which the laboring groups have given to the idea of compulsory health insurance.—*Brewer, North Carolina M. J., May '53.*

1954 MEETING  
OF THE ASSOCIATION  
ADMIRAL SEMMES HOTEL  
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APRIL 15-17

## TRANSACTIONS OF THE ASSOCIATION

### 1953 SESSION

#### Concluded

**Last Day, Saturday, April 18**

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 9:00 A. M. by the President, Dr. B. W. McNease.

The report of the Board of Censors was rendered by the Chairman, Dr. E. V. Caldwell of Huntsville.

#### **THE SEVENTY-NINTH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORTS AS A STATE BOARD OF MEDICAL EXAMINERS, AND AS A STATE COMMITTEE OF PUBLIC HEALTH**

**E. V. Caldwell, M. D., Chairman**

#### **PART I**

The State Board of Censors has the honor to submit to the Association its Seventy-Ninth Annual Report.

#### **THE PRESIDENT'S MESSAGE**

The President's Message reveals wide knowledge, deep thinking and appreciation of the activities and regulations of this Association. He analyzes and discusses the work and progress made during his term of office—our public relations, our obligation to protect our present Medical Practice Act, the activities of our committees, the prevention and cure of cancer, the care of the tuberculous, the protection of our right to freedom in the practice of medicine, our relations to other interests, the right of each Society to determine its membership on the basis of qualification and merit solely, the changing of the ordinance governing dues to the Association, the building of a permanent home for the Association; hospital, medical and surgical insurance for every one, the expansion of public health activities, the distribution of physicians, the shortage of nurses, the revitalization of our medical societies, and the training of new physicians in the tradition and ethics of medicine.

The recommendation of the President that all active members of the Association pay dues requires further study, and the Board recommends that this matter be left over until the next meeting of the Association.

The Board expresses its appreciation of the President's efforts and recommends the adoption of his Message.

*The President's Message was adopted as recommended by the Board.*

#### **REPORTS OF THE VICE-PRESIDENTS**

The reports of the Vice-Presidents indicate that they have all been active this past year, particularly in promoting the program of the Committee on Medical Service and Public Relations and in determining the feeling of the profession.

Each Division held one scientific meeting during the year with good attendance and with excellent programs. The present ordinances of the Association provide for two district meetings each year but this has not been practiced in recent years. The Board concurs in the recommendation of two of the Vice-Presidents that the ordinances be amended to call for at least one meeting each year in each district.

Therefore, be it ordained by the Medical Association of the State of Alabama that Section 4 of the ordinance entitled "Districts and Duties of Vice-Presidents (Adopted, 1925)," be amended to read as follows:

"Section 4. That, in addition to the other duties of a vice-president prescribed in the constitution, he shall hold each year at least one meeting of the medical societies comprising his district and at such place as he may deem most suitable and acceptable for the members of his district."

The Vice-President of the Northwestern District recommends a committee on policies dealing with the United Mine Workers. A similar recommendation has come from Jefferson County. The Board, therefore, recommends that the new President appoint a committee of members from the counties involved to work out problems connected with the medical care program and to report back its recommendations.

The Board recommends the adoption of the reports of the Vice-Presidents.

*The reports of the Vice-Presidents were adopted.*

#### **REPORT OF THE SECRETARY-TREASURER**

The membership of the Association continued to grow with the increase in the number of physicians in the state—91% being active members. With the threat of outside interference in medical practice an ever present one, the solidarity of the profession is gratifying.

As usual a number of our colleagues departed this life, including two Past Presidents in the persons of Drs. R. S. Hill and J. M. Mason. The Association is richer in having known all these members and it is poorer by their passing on.

The report of the Treasurer indicates that the Association lived within its income this past year and the Auditors found that the funds had been handled in proper fashion.



The adoption of the report is recommended.

*The Association approved the report of the Secretary-Treasurer.*

#### REPORTS OF COMMITTEES

##### COMMITTEE OF PUBLICATION

The report as to the Journal is encouraging. It had been anticipated that there would be a deficit in the financing this year, but on the contrary a small profit was realized. The Board concurs in the tribute paid to William W. Wilkerson, an editor throughout the life of the Journal.

The adoption of the report is recommended.

*The report was adopted.*

##### MEDICAL SERVICE AND PUBLIC RELATIONS

The main activity of the Committee during the past year has been in connection with the proposed changes in the Medical Practice Act and in the organization of the profession to prevent any inroads by cultists. The responsibility of convincing legislators as to the soundness of the program is now in the hands of the individual physicians, since the Committee has done its work well.

The inauguration of radio programs prepared by Alabama physicians and designed to present authentic information on every-day topics is a worth-while endeavor and the Board commends the Committee for its activities.

The Board recommends adoption of the Committee's budget and of its report.

*The Board's recommendation was adopted by the Association.*

##### MENTAL HYGIENE

The state-wide interest in the support of the mental hospitals is a wholesome one. The Committee also calls attention to other developments in the field of mental health, particularly the activities of the Health Department program. The need for additional clinics and for some type of in-patient care in the Birmingham area is stressed. The Committee also recommends that Blue Cross-Blue Shield recognize mental and emotional illnesses in its contracts.

The Board recommends adoption of the report.

*The report was adopted.*

##### MATERNAL AND CHILD HEALTH

The activities of this Committee in sponsoring an investigation of every maternal death in Alabama is to be highly commended. The findings indicate that most maternal deaths are preventable and therefore every death that occurs is a reflection on some one—whether the patient herself, the physician, the midwife or the hospital attendant. Fewer deaths occurred than in previous years but there is still room for improvement. It is recognized that Negro midwives will continue in many areas of the State and every effort should be made to regulate and, in so far as possible, educate these women. More prenatal clinics are needed.

The Board recommends the adoption of the report.

*The Board's recommendation was concurred in.*

##### CANCER CONTROL

The Cancer Control Committee in its report has summarized very well the present status of the cancer program in the State. The scope of the treatment program, the accomplishments and the limitations are well portrayed. Needs for the future are also outlined. The Board recommends reading in detail the report of the Committee.

One recommendation calls for approval of a cancer symposium to be held in Birmingham in early 1954—sponsored by the Alabama Division of the American Cancer Society and bringing in all those interested in cancer control. The scientific presentations would include many of the outstanding authorities in the country. The Board not only recommends approval of this project but urges wholehearted support by Association members. The work of the Alabama Division, American Cancer Society, has done much to enlighten the public on cancer and it is obvious that the medical profession must keep ahead of lay demands. The physician's office is the front line of attack in finding and treating this disease.

The Board recommends adoption of the report.

*The report was adopted.*

##### PREVENTION OF BLINDNESS AND DEAFNESS

In this report the Committee outlines a proposed bill for controlling the sale and use of air guns, firearms and projectiles, and, if endorsed by the Board of Censors and this Association, that it be brought to the attention of the Senators and Representatives of the state of Alabama.

While the Board feels that the prevention of blindness is of paramount importance, it also feels there are ordinances governing the sale and use of air guns, firearms and projectiles now in force in practically all incorporated cities and towns of the State. Therefore, the Board recommends that no action be taken on a state-wide regulation at this time.

*The Board's recommendation was approved by the Association.*

##### POSTGRADUATE STUDY

The plan of holding regional assemblies was continued this past year with three groups taking advantage of the program. A total of twenty counties were represented at these assemblies and approximately twenty speakers from the Medical College composed the faculty. Each year this program demonstrates its worth as a means of making available to the physicians of the State late information on subjects of their choice.

The Board commends the activity and hopes that other areas of the State will take advantage of it. It recommends to the Health Department the continuing appropriation of \$1,500, to be supplemented, if needed, by up to \$1,000 of Association money.

The Board recommends adoption of the report.

*The report was adopted.*

##### INDUSTRIAL MEDICINE

The Industrial Health Council of Birmingham has expanded to embrace industries in other communities and in the opinion of the Committee is

doing an excellent job in furthering the cause of industrial medicine. The interest of the Medical School in including industrial medicine as part of its educational program is to be commended.

The Board recommends approval of the Committee's report.

*Approval was given the report.*

#### PHYSICIAN-DRUGGIST RELATIONSHIPS

The Committee has been quite active this past year and the chairman has represented the Association in contacts with the Alabama Pharmaceutical Association. Apparently the relationship of physicians and druggists is on a high ethical plane.

The adoption of the report is recommended.

*The Board's recommendation was concurred in.*

#### ANESTHESIOLOGY

The report of the Committee indicates that there are increasing numbers of physician-anesthetists locating in Alabama and this certainly is very wholesome. Better surgery will be done with skilled anesthesia. The Medical College and the Lloyd Noland Hospital are approved for residency training and offer short-term training to any physician in the State.

The Board recommends adoption of the report.

*The report was adopted.*

#### TUBERCULOSIS

The phenomenal drop in the death rate from tuberculosis in Alabama during 1952 represents the results of modern treatment and the influence of drug therapy. It does not indicate, however, any lessening of the problem since the number of cases of the disease has not shown a corresponding decline. The Health Department's files contained the names of 11,555 residents with tuberculosis as of December 31st, 1952, and there were available only a few more than 700 beds to care for this number. As a result many have become far-advanced treatment problems before they can gain admission to one of the institutions.

The financing of hospital care has never been adequate and it has become a serious problem with rising costs. The Alabama Tuberculosis Association is asking the State to assume much more of the cost of operating the various sanatoria, with the ultimate goal of complete maintenance as is the case with most states. The Committee heartily endorses this goal and asks the State Association to support it.

The Board recommends adoption of the report.

*The Association concurred in the Board's recommendation.*

#### REPORTS OF SPECIAL COMMITTEES

##### ON STATUTE OF LIMITATION IN MEDICAL PRACTICE SUITS

Two years ago a committee was appointed to prepare suitable legislation to reduce the present six-year period for filing suits in medical practice cases to the one year provided for damage suit cases.

The Committee has prepared a suitable bill and it is recommended that the President authorize this Committee or a new committee, if he sees fit, to secure introduction and sponsoring of this proposed legislation, and further, that the members of the Association take an active interest in its passage.

*The Board's recommendation was approved.*

#### ON MEMBERSHIP EXTENSION

For its report the Committee brought in this resolution:

"1. WHEREAS, At the April meeting in 1952, the president of the Medical Association of the State of Alabama recommended that thought be given to extension of membership in the Association to all worthy and legally qualified physicians of the State; and

"2. WHEREAS, The Association authorized the creation of a committee to study this matter, which committee was appointed by President McNease, the current president; and

"3. WHEREAS, This Committee has studied and given careful consideration to the various plans proposed by other states to extend the membership in their medical associations, and has concluded that none of these plans is applicable to the state of Alabama; and

"4. WHEREAS, The present constitution of the Medical Association of the State of Alabama provides that graduates of reputable medical colleges who have been licensed to practice medicine in Alabama are eligible for consideration for membership in the constituent county societies, and that all members of such county societies holding charters from the Medical Association of the State of Alabama are ipso facto members of the Medical Association of the State of Alabama; therefore be it

"1. *Resolved*, That it is the sense of the Committee that the present constitutional provisions regarding membership in the Medical Association of the state of Alabama are sufficient; and be it further

"2. *Resolved*, That it is the opinion of the Committee that the responsibility for admission to membership in the Medical Association of the State of Alabama should continue to be vested in the county societies, and the Committee recommends that the county societies make every effort to accept physicians as members on a basis of qualifications and merit."

The Constitution of county medical societies, as it relates to membership (Article III, Section 1), reads that "All legal, reputable, and ethical physicians of the county shall be eligible for membership in this society."

Inasmuch as this Committee's report reiterates and conforms to the long existing principles enunciated in this article and section, the Board recommends the adoption of this report.

*The report was adopted as recommended by the Board.*



APPEAL OF DR. H. A. DARBY ON BEHALF OF DR. D. E. JACKSON FROM THE ACTION OF THE LIMESTONE COUNTY MEDICAL SOCIETY IN DENYING HIM MEMBERSHIP

The Board has some assurance that this controversy may be settled amicably locally in the near future. The Board therefore recommends that this matter be passed for a year, pending an amicable settlement on the local level.

*The Board's recommendation received the approval of the Association.*

PHYSICIANS' ADVISORY BOARD TO THE MEDICAL COLLEGE OF ALABAMA

Inasmuch as the terms of Dr. W. D. Partlow and Dr. Frank W. Riggs to the Physicians' Advisory Board have expired, the Board recommends that Dr. Josiah H. Smith, Selma, be appointed for a term of two years, expiring July 28, 1955; and that Dr. William D. Anderson, Tuscaloosa, be appointed for a term of four years, expiring July 28, 1957.

*The recommendation was approved.*

EXECUTIVE COMMITTEE OF BLUE CROSS-BLUE SHIELD

To succeed Dr. J. O. Morgan, Gadsden, whose term on the Executive Committee of Blue Cross-Blue Shield expired December 31, 1952, the Board recommends that Dr. E. Bryce Robinson, Jr., Fairfield, be appointed for a term of three years, expiring December 31, 1955; that Dr. T. Brannon Hubbard, Montgomery, be appointed for a term of three years, expiring December 31, 1956, to succeed Dr. Carl A. Grote, Huntsville, whose term will expire December 31, 1953; and that Dr. James G. Daves, Cullman, whose term will expire December 31, 1953, be appointed for a full term of three years, expiring December 31, 1956.

*The Board's recommendation was concurred in.*

LEGISLATION

The new regime in Washington will undoubtedly alter many of the existing health programs but at this time the only major change has been the creation of a Department of Health, Education and Welfare with cabinet recognition. It is not anticipated that bills covering compulsory insurance will receive any serious consideration this session.

The State Legislature will convene in May and as usual has difficult financial and other problems. The Health Department has been operating on a stationary budget for a number of years and obviously must have increased appropriations or else face the curtailment of many of the present activities. The Board bespeaks the active support of every physician in the State. We, by law, are the Board of Health and the responsibility rests on us for conveying to the legislators our needs in the public health field.

The attempted revision of the Medical Practice Act and the position of the Association have been well presented by the Committee on Medical Service and Public Relations and we need to follow through with its program.

*This expression on the part of the Board received the approval of the Association.*

REPORT WITH REGARD TO FEDERAL AGENCIES

The amount of money to be available under the grant-in-aid programs is unknown at the present time but there will undoubtedly be changes in the formula of distribution. The venereal disease program is being returned to the states and the federally financed rapid treatment centers are closed. Our relationships have continued on a very friendly footing and our programs have been officially approved and endorsed.

A RESOLUTION ON TUBERCULOSIS NURSING EDUCATION

Introduced by Dr. Garber

"WHEREAS, The proper and maximum care of the sick is the prime and ultimate achievement of the medical and nursing professions, and

"WHEREAS, The promotion and promulgation of preventive medicine is a valuable educational asset that must originate with and be executed by the medical and nursing professions, and

"WHEREAS, Tuberculosis is a disease that lays waste to life, is communicable, and has ramified socio-economic significance, and

"WHEREAS, There must never be a reduction of skilled personnel to control, treat and nurse the tuberculous patient, and

"WHEREAS, The leaders in antituberculosis work should sustain the very wholesome program of hospital training schools student nurse affiliation in the tuberculosis hospitals within the State, and

"WHEREAS, Every agency associated with tuberculosis work in Alabama must be alert not to subordinate the total welfare of tuberculosis victims for any cause whatsoever, and

"WHEREAS, A directive has been issued from the State Department of Education to terminate the tuberculosis nursing education in the state of Alabama on May 1, 1953; now therefore be it

"Resolved, That the Medical Association of the State of Alabama, in convention in Birmingham, April 16-18, 1953, recommends and endorses:

"1. A continuation, without interruption, of the tuberculosis nursing education program that was activated in June 1952, with the following aims outlined:

- (a) Improved care of the patient with tuberculosis,
- (b) Better prepared professional nurses,
- (c) Less fear of tuberculosis,
- (d) Control and eradication of the disease.

"2. That the professional student nurse's affiliation that was activated in June 1952 be preserved and remain in operation for the mutual benefits of tuberculosis patients and nursing education.

"3. That, inasmuch as the medical and nursing professions remain the last outpost of learned leadership in health matters, it is consistent to

insist upon invoking such a prerogative when the structure of health education and progress is in danger; and be it further

“Resolved, That a copy of these resolutions be forwarded to the State Superintendent of Education in Montgomery, Alabama, on an immediate date in the hope that this appeal from the Doctors of Alabama will stay the execution of the profitable program of tuberculosis professional nursing education in the state of Alabama.”

The Board recommends adoption of this resolution.

*The resolution was adopted.*

COMMUNICATION FROM DR. L. W. ROE TO THE  
GOVERNOR REGARDING TUBERCULOSIS  
HOSPITALIZATION

Presently the northeast region of the State is preparing to construct a new sanatorium in Gadsden for the care of tuberculosis patients from that area of Alabama. At the same time a movement is on foot to acquire the old Marine Hospital in Mobile to serve the southwestern part of the State. It would appear, therefore, that any recommendation for the construction of a single state institution to care for South Alabama should await the outcome of the present negotiations.

*The expression of the Board was approved by the Association.*

*Part I of the Board's report was adopted as a whole.*

PART II  
REPORT OF THE BOARD OF CENSORS AS A  
BOARD OF MEDICAL EXAMINERS

In this field of its activities the Board submits the following statistical report for 1952:

|  |     |
|--|-----|
| Certificates of qualification granted.....   | 167 |
| (a) Physicians passing the examinations<br>June 24-26, 1952.....                     | 66  |
| (1) Certificates issued.....   | 15  |
| (2) Certificates to be issued after in-<br>ternships.....                            | 51  |
| (b) Chiropractor failing to pass examina-<br>tions June 24-26, 1952.....             | 1   |
| (c) Certificates granted applicants com-<br>pleting internships January 1, 1952..... | 2   |
| (d) Certificates granted applicants com-<br>pleting internships July 1, 1952.....    | 51  |
| (e) Physicians granted reciprocity.....  | 84  |
| (f) Diplomates of the National Board of<br>Medical Examiners licensed.....           | 14  |
| (g) Commissioned Officer of the United<br>States Navy licensed.....                  | 1   |
| (h) Physicians relicensed to practice med-<br>icine.....                             | 2   |
| (i) Physicians' certificates of qualification<br>to practice medicine revoked.....   | 2   |
| (j) Chiroprody renewal licenses issued.....  | 35  |

CERTIFICATES OF QUALIFICATION GRANTED  
JUNE 1952 APPLICANTS

|                         |                       |
|-------------------------|-----------------------|
| Angel, Ronald W.        | Nixon, Willard L.     |
| Bell, Frances M.        | Parapid, N. V.        |
| Cantley, Donald A., Jr. | Ramage, Raymond C.    |
| Chi, David T. W.        | Richard, James S.     |
| Davis, Sarah F.         | Thorington, Ed C.     |
| Donovan, John L.        | Weir, Hughey M.       |
| Mills, Harold J.        | Wilson, Frank C., Jr. |
| Mudd, Robert H.         |                       |

CERTIFICATES TO BE ISSUED AFTER ONE YEAR OF  
SATISFACTORY INTERNSHIP

|                             |                            |
|-----------------------------|----------------------------|
| Bargeron, L. M., Jr.        | Kirkland, Lewis E.         |
| Bates, James S., Jr.        | Lamberth, Lewis M.         |
| Beddow, Charles P.          | Lightfoot, Robert M.       |
| Blanton, Harold L.          | Lowry, Mary E.             |
| Burt, Charlie H.            | Martin, Robert L., Jr.     |
| Calhoun, W. E., Jr.         | Maxwell, Benjamin C.       |
| Carter, W. L., Jr.          | Merchant, John P., Jr.     |
| Childs, Hoyt A.             | Norman, William R.,<br>Jr. |
| Coker, James W., Jr.        | Norris, Woodfin G., Jr.    |
| Cook, Malcolm C.            | Penton, George B.          |
| DeVane, F. H.               | Phillips, Sidney C., Jr.   |
| Duke, Joseph E.             | Phillis, William R.        |
| Edwards, John A., Jr.       | Price, Cecil E.            |
| Flynn, Thomas J.            | Robinson, Carl R.          |
| Garrett, Steiner D., Jr.    | Rudder, William H.         |
| Glass, Henry G.             | Seay, James E., III        |
| Gray, Sidney J., Jr.        | Sherrill, Fred O., Jr.     |
| Hannon, Kenneth M.          | Sherrill, John D., Jr.     |
| Holcomb, Maurice C.,<br>Jr. | Sims, Marion H.            |
| Holland, Claude M., Jr.     | Skinner, Henry F., Jr.     |
| Jackson, Benjamin B.        | Spruiell, Vann E.          |
| Jackson, James S., Jr.      | Thomas, Henry D.           |
| Jarrett, Melvyn C.          | Thomas, Julius O.          |
| Johnson, Richard H.         | Till, Walter H.            |
| Kent, Edwin B.              | Walker, Rhett P.           |
| Kimbrough, James E.         |                            |

CERTIFICATES GRANTED APPLICANTS COMPLET-  
ING INTERNSHIPS JANUARY 1, 1952

|                       |                     |
|-----------------------|---------------------|
| Castleberry, Jesse W. | Lombardo, Thomas A. |
|-----------------------|---------------------|

CERTIFICATES GRANTED APPLICANTS COMPLET-  
ING INTERNSHIPS JULY 1, 1952

|                             |                             |
|-----------------------------|-----------------------------|
| Abele, Henry B.             | Jaudon, George R.           |
| Balthrop, John E., Jr.      | Johnson, Leslie M.          |
| Blakeney, William H.        | Lusk, John A., III          |
| Byrd, Ben Ralph             | McCarley, John T., Jr.      |
| Caffey, Benjamin F.,<br>Jr. | Meigs, Lamar C.             |
| Caldwell, Harry E.          | Miller, John C.             |
| Callahan, James S., Jr.     | Montgomery, R. A., Jr.      |
| Campbell, David A.          | Moore, John M.              |
| Carpenter, B. S., Jr.       | Moore, John T., Jr.         |
| Carter, Thomas E., Jr.      | Moughon, William S.,<br>Jr. |
| Chenault, Sidney B.         | Muir, Ian W.                |
| Coggan, George M.           | Myer, Edward M.             |
| Collins, Douglas            | Nolen, Mary F. M.           |
| Cooner, William H.          | Nolen, Thirwell M.          |
| Copeland, Albert B.         | Nuckols, Frank J.           |
| Draughon, R. L., Jr.        | Osment, Lamar S.            |
| Duff, Roland D.             | Pinkerton, H. A.            |
| Haden, Robert H.            | Robertson, William H.       |
| Harris, Richard A.          | Saunders, John C.           |
| Hicks, John H.              | Sherrod, Joseph A., Jr.     |
| Hogan, Robert S.            | Strong, Q. R.               |
| Hyde, Mattie I.             | Terrell, Clyde              |



|                    |                    |
|--------------------|--------------------|
| Wade, John F.      | Whitley, Milton E. |
| Webb, John W., Jr. | Wise, Robert H.    |
| Whatley, George B. | Young, Roy G., Jr. |
| Whitehead, John S. |                    |

RECIPROCITY APPLICANTS RECEIVED DURING THE  
CALENDAR YEAR OF 1952

|                                  |               |
|----------------------------------|---------------|
| Abell, Raymond E., Jr.—La.       | Sept. 26, '52 |
| Atkins, Earnest C., Jr.—Ga.      | July 1, '52   |
| Baker, Grady L.—Ky.              | July 25, '52  |
| Barefield-Pendleton, T. J.—Tenn. | Nov. 28, '52  |
| Barnes, Marian—Ill.              | Sept. 17, '52 |
| Bassett, John W.—La.             | July 7, '52   |
| Berry, Keehn W., Jr.—N. B. M. E. | Aug. 4, '52   |
| Black, Arthur K.—Va.             | Sept. 26, '52 |
| Boston, Thomas E.—Tenn.          | Feb. 11, '52  |
| Bostwick, Jackson L.—La.         | Apr. 28, '52  |
| Butler, Maurice K.—Mont.         | Aug. 27, '52  |
| Byrne, Haynes C.—Ga.             | July 25, '52  |
| Cantrell, William C.—U. S. Navy  | June 12, '52  |
| Carlisle, James M.—Pa.           | Dec. 8, '52   |
| Carroll, Gordon E.—Wis.          | Dec. 9, '52   |
| Carter, Barbara L.—N. B. M. E.   | June 30, '52  |
| Caswell, Doyle F.—Ga.            | Jan. 16, '52  |
| Chase, Lewis S.—Va.              | Mar. 27, '52  |
| Comfort, David M.—Miss.          | Oct. 8, '52   |
| Cook, Thomas D.—N. B. M. E.      | Dec. 19, '52  |
| Crawford, Alvin S.—N. B. M. E.   | July 7, '52   |
| Crittenden, William C.—Tenn.     | July 7, '52   |
| Cronic, F. Maier—Ga.             | July 10, '52  |
| Crosby, John F., Jr.—La.         | Dec. 22, '52  |
| Davis, Earl Scott—Ill.           | June 24, '52  |
| Devine, Marguerite M.—Pa.        | Oct. 8, '52   |
| Dixon, James P.—Tenn.            | July 11, '52  |
| Duncan, Walter C.—Ark.           | July 16, '52  |
| Eaves, Robert F., Jr.—Ga.        | Oct. 15, '52  |
| Fackler, William B., Jr.—Ga.     | Jan. 16, '52  |
| Foster, Maynard V.—Ky.           | Aug. 11, '52  |
| Foster, William B.—Tenn.         | Aug. 27, '52  |
| Francis, Richard L.—N. Y.        | Apr. 16, '52  |
| Frey, Sidney S.—Ark.             | Oct. 15, '52  |
| Friedl, Lois E.—Ill.             | Mar. 10, '52  |
| Galen, William P.—N. B. M. E.    | July 14, '52  |
| Garner, Joe F.—Ga.               | Mar. 27, '52  |
| Gedney, Leigh M.—Ga.             | July 25, '52  |
| Gilbert, Howard P.—Col.          | July 2, '52   |
| Green, Frank D.—Tenn.            | June 11, '52  |
| Griffith, Muriel E.—Ill.         | Jan. 16, '52  |
| Guest, Maurice C.—Cal.           | Apr. 9, '52   |
| Hare, W. Kendrick—N. B. M. E.    | Mar. 17, '52  |
| Hasty, Barbara A.—Tenn.          | Aug. 4, '52   |
| Headrick, William L., Jr.—Tenn.  | Sept. 11, '52 |
| Herbert, Floris M.—La.           | June 11, '52  |
| Herring, John S.—La.             | May 13, '52   |
| Howe, Eugene H.—Ga.              | Apr. 9, '52   |
| Jackson, Theodore L.—Md.         | Apr. 7, '52   |
| Jeter, James Neal—Tenn.          | Aug. 27, '52  |
| Jordan, Ernest W.—Cal.           | Nov. 18, '52  |
| Klotz, Nevin J. M.—Ohio          | Jan. 16, '52  |
| Landry, Roy A.—La.               | June 30, '52  |
| Loveman, David E.—La.            | Mar. 6, '52   |
| Maddox, William A.—N. B. M. E.   | May 27, '52   |
| May, William David—Miss.         | Feb. 8, '52   |
| McCanless, James T.—Ga.          | Sept. 26, '52 |
| McKee, Wilbur E.—Ohio            | May 19, '52   |
| McMahon, John M.—N. B. M. E.     | Feb. 14, '52  |
| Meadows, Jesse C., Jr.—Ga.       | Aug. 27, '52  |
| Meyer, Isidore S.—Ill.           | Apr. 7, '52   |
| Miller, Joe Morris—Tenn.         | Nov. 17, '52  |
| Mobley, Emmett P., Jr.—Tenn.     | Feb. 11, '52  |

|                                     |               |
|-------------------------------------|---------------|
| Mobley, Joe Dick—Tenn.              | Feb. 11, '52  |
| Morgan, Bernard L. N.—N. B. M. E.   | Jan. 16, '52  |
| Morgan, Philander D., Jr.—Ga.       | Sept. 15, '52 |
| Morgan, William G.—Ind.             | Mar. 17, '52  |
| Mott, George Ernest—Mass.           | Jan. 16, '52  |
| Newhauser, Mayer Aby—La.            | Aug. 27, '52  |
| Nicholson, Francis—La.              | Oct. 22, '52  |
| Norrell, Milton G., Jr.—N. B. M. E. | Jan. 29, '52  |
| Odum, John Darby—Ga.                | Apr. 16, '52  |
| Olmsted, John G. M.—Md.             | Oct. 1, '52   |
| Penton, R. Simeon B.—Md.            | June 30, '52  |
| Rennings, Wilbur W.—Cal.            | July 22, '52  |
| Rice, John B. M., Jr.—La.           | Dec. 1, '52   |
| Richard, Leo S.—Ga.                 | Apr. 28, '52  |
| Robinson, Byron L.—Minn.            | June 16, '52  |
| Sargent, Winston A. Y.—Vt.          | June 30, '52  |
| Scott, Floyd E.—N. B. M. E.         | Sept. 9, '52  |
| Secor, Ralph Calvin—N. Y.           | May 7, '52    |
| Shugerman, Alwyn A.—N. B. M. E.     | June 12, '52  |
| Simmons, Robert C., Jr.—Tenn.       | June 2, '52   |
| Smith, Curtis Andrew—Ill.           | Aug. 27, '52  |
| Steinberg, Benjamin J.—S. C.        | July 16, '52  |
| Strong, Jack Perry—La.              | July 21, '52  |
| Thompson, Daniel J.—Tenn.           | Aug. 4, '52   |
| Truss, Claude Orian—N. B. M. E.     | Aug. 11, '52  |
| Waldron, Melvin C.—Ky.              | June 3, '52   |
| Walker, William R.—Tenn.            | Oct. 20, '52  |
| Warren, William S.—Ga.              | May 19, '52   |
| Welburn, James C.—Miss.             | Dec. 24, '52  |
| Wells, Clay Norris—La.              | Mar. 6, '52   |
| Welton, Felix B.—Va.                | Oct. 22, '52  |
| Wigfall, Clarence M.—Tenn.          | Oct. 22, '52  |
| Williams, James, Jr.—La.            | July 7, '52   |
| Woolley, Andrew P., Jr.—Mo.         | Aug. 12, '52  |
| Wynn, William H.—La.                | July 10, '52  |
| Zdanis, Albert S.—N. B. M. E.       | May 13, '52   |

CHIROPODY RENEWAL LICENSES ISSUED FOR 1953

|                         |                   |
|-------------------------|-------------------|
| Alexander, Isadore H.   | Birmingham        |
| AuCoin, William J.      | Mobile 12         |
| Austin, Elizabeth Sealy | Montgomery 4      |
| Benitez, George W.      | Birmingham 3      |
| Blotzer, Ellen L.       | Mobile 10         |
| Blotzer, John S.        | Mobile 10         |
| Carter, Harry S.        | Florence          |
| Clark, George E.        | Birmingham 3      |
| Coleman, Jasper C.      | Dothan            |
| Cooper, John M.         | Birmingham 3      |
| Crowley, Coy H.         | Mobile 13         |
| Crowley, Gentry B.      | Huntsville        |
| Davis, Edith M.         | Birmingham 3      |
| DeViso, Viola           | Anniston          |
| Dixon, Mildred K.       | Tuskegee Inst.    |
| Draper, William L.      | Birmingham 3      |
| Edwards, Charles M.     | Birmingham 3      |
| LeCroy, Thomas H.       | Sylacauga         |
| Leighty, Fred G.        | Birmingham        |
| Lewis, Martin           | Nashville, Tenn.  |
| Miller, John            | Mobile            |
| Oxford, Herman R. A.    | Tuscaloosa        |
| Pearson, Joe Price      | Birmingham        |
| Peterson, Bessie C.     | Birmingham        |
| Plevine, Erich H.       | Birmingham        |
| Rae, Hugh               | LaGrange, Ill.    |
| Riccio, P. D.           | Bridgeport, Conn. |
| Rollings, Harry H.      | Montgomery 4      |
| Sealy, Ariel Lewis      | Safford           |
| Sealy, Edward Earl      | Montgomery 4      |
| Silverman, Isidor       | Birmingham 3      |
| White, Juddie B.        | Birmingham 3      |

Wittick, Arthur, Jr.                    Philadelphia 11, Pa.  
Wright, Thomas L.                    Selma  
Young, Frank N.                    Cleveland 3, O.

Part II of the Board's report was approved as a whole.

PART III

REPORT OF THE BOARD AS A STATE COMMITTEE OF PUBLIC HEALTH

D. G. Gill, M. D.  
State Health Officer

PREFACE

A summary of activities of the official Health Department is included in this report but it might be well to emphasize a few of the high lights. The year 1952 was no exception to a long list of years with a high birth rate and a low death rate—natural population increase being almost 55,000. Many of the Health Department activities are associated with infants, so Alabama has a continuing problem with its maternal and child health programs. Last year there were fewer maternal deaths and fewer infant deaths, however, per 1,000 births than at any time in the State's history. This would certainly indicate better obstetric care than in the past.

Cancer, after a year of falling rates, renewed its upward trend and is the leading cause of death after heart and vascular lesions. Accidents still rank high, and it may be pointed out that home accidents play a prominent part in these figures.

Tuberculosis showed a phenomenal decrease in deaths, with a drop of more than 25% from the preceding year. The addition of newer drug therapy, combined with selective surgery, is keeping many tuberculous patients alive. There is no apparent reduction in the number of infections being found, however.

Alabama continues to have too many cases and deaths from diphtheria, although some progress is being made. In general, the communicable disease picture was favorable—poliomyelitis, which nationally set new high records, was within normal limits for this State. Control of this disease looms as a distinct possibility in the not too distant future.

Increased costs of operation and with a fixed appropriation have presented many problems in administration. Lessened services may be the forced answer.

ADMINISTRATION

HOSPITAL PLANNING

During 1952 five general hospitals, one combination general hospital and public health center, and one public health center were completed under the Hill-Burton program. This made a total of 16 general hospitals, 6 public health centers, 4 combination general hospital-public health centers, 2 schools of nursing, 2 units for mental patients, and 1 dental clinic, or a grand total of 32 health facilities, since the Division was organized five and one-half years ago. The total

number of hospital beds added during this period is 2,146.

The following facilities were opened this year (1952):

| Facility                          | Location   | Type      | Beds |
|-----------------------------------|------------|-----------|------|
| Mobile Infirmary                  | Mobile     | Gen.      | 300  |
| Providence Hospital               | Mobile     | Gen.      | 200  |
| Druid City Hospital               | Tuscaloosa | Gen.      | 241  |
| Lee County Hospital-Health Center | Opelika    | Gen.-PHC. | 80   |
| Blount Memorial Hospital          | Oneonta    | Gen.      | 30   |
| Lamar County Hospital             | Vernon     | Gen.      | 30   |
| Madison County Health Center      | Huntsville | PHC.      | .... |

Under construction at the end of the year were nine small general hospitals scattered throughout the State. They are:

| Facility                          | Location   | Type | Beds |
|-----------------------------------|------------|------|------|
| Randolph County Hospital          | Roanoke    | Gen. | 35   |
| Washington County Hospital        | Chatom     | Gen. | 20   |
| South Pickens County Hospital     | Aliceville | Gen. | 30   |
| Conecuh County Hospital           | Evergreen  | Gen. | 30   |
| D. W. McMillan Memorial Hospital  | Brewton    | Gen. | 35   |
| North Pickens County Hospital     | Reform     | Gen. | 30   |
| Bryan Whitfield Memorial Hospital | Demopolis  | Gen. | 29   |
| Lawrence County Hospital          | Moulton    | Gen. | 40   |
| Holy Family Hospital              | Birmingham | Gen. | 62   |

Scheduled for construction to begin by the end of the fiscal year 1953 are:

| Facility                            | Location   | Type | Beds |
|-------------------------------------|------------|------|------|
| District IV Tuberculosis Sanatorium | Gadsden    | TB.  | 140  |
| Barbour County Hospital             | Eufaula    | Gen. | 50   |
| Enterprise Health Center            | Enterprise | PHC. | .... |
| Lauderdale County Health Center     | Florence   | PHC. | ..   |
| State Health Building               | Montgomery | Lab. | .... |

On file at the end of 1952 were applications for aid in constructing 42 general hospitals, with a total of 1,472 beds; twelve public health centers; five schools of nursing; and three tuberculosis sanatoria.

The number of licensed hospitals and allied facilities was increased to 231 during the year. Of this number 112 (74 hospitals, 18 clinic-hospitals,



19 nursing homes, 1 maternity home) were granted regular licenses. Thirty-two more (18 hospitals, 4 clinic-hospitals, 9 nursing homes, 1 maternity home) were eligible for regular licenses. Of the remaining 87, 27 had made most of the required improvements, and 10 were facilities that are to be replaced by Hill-Burton projects in the near future. The remaining institutions were expected to meet the requirements within a short time.

A Nursing Home Manual was compiled and distributed to the operators of all licensed nursing homes during the year. Contents of the Manual included general information, selection of the proper type of home, nursing procedures, food and nutrition, records, suggestions on staffing, and selected reference books.

### *Mental Hygiene*

In 1952 the Division of Mental Hygiene carried out a six-point program:

(1) *Child Study*—In conjunction with the Alabama State Department of Education, county boards of education and teachers' associations throughout the State, it presented programs on child development to increase the teacher's understanding of normal child development. It entered a joint program with the Cullman County Board of Education to provide a three-year intensive study program for teachers under the University of Maryland Child Study Program. It cooperated with P. T. A.'s throughout the State in their programs of Education for Responsible Parenthood. It participated with nursing bureaus and with the Alabama Association of University Women in prenatal classes to prepare parents for the coming of their children.

(2) *Family Life*—The Division participated with the University of Alabama Extension Service and local groups in family life institutes in Huntsville, Gadsden, Mobile, Birmingham, Anniston, Opp and Andalusia. It participated as guest lecturers at Jacksonville State Teachers' College, A. & M. College, the School of Education of the University of Alabama, the Department of Philosophy and Psychology of Talladega College, Miles College, the Departments of Psychology and Education of Florence State Teachers' College, and the Department of Psychology of Alabama Polytechnic Institute in programs geared to increasing understanding of family adjustment. It worked with high schools in the Birmingham area to include, within their curriculum, courses on family life.

(3) *Pastoral Counseling*—As more people in the State contact ministers when they wish help than any other single resource the Division has been pleased to co-sponsor, with the Ministerial Associations in Mobile and Birmingham, programs to aid ministers in developing additional counseling techniques.

(4) *Industrial Health*—The Division co-sponsored, with the Industrial Health Council, a program on industrial mental health. An annual workshop of one week duration has won national attention. Plans are being made for further work within plants on a small group basis. These have been tried in the past and have been most successful.

(5) *County Mental Health Programs*—The staff has provided consultation services to local county health departments in their development of local divisions of mental health. The Mobile County mental health program has continued. The Jefferson County Board of Health opened the Jefferson County Division of Mental Health in October 1952. The Lauderdale County mental health program was expanded in cooperation with Colbert County to form the Muscle Shoals Division of Mental Health to be effective as of January 5, 1953. These county programs provide community organizational services to help communities develop resources to prevent mental illness. They provide educational services to professional groups in order to increase skills in the mental health area. They also provide educational services to volunteer groups where there is no local mental health society to provide these services. Case consultation is provided on request to those people who are providing mental health first aid services to many people through counseling. Ministers, doctors, nurses, social workers and teachers have asked for this service. Clinical treatment, utilizing the team approach of psychiatrist, clinical psychologist and psychiatric social worker, has been offered in the three county programs. In addition to these three county health programs, the Division has contributed consultation services and funds to the University of Alabama Psychological Services Clinic and to the John A. Andrew Memorial Mental Hygiene Clinic at Tuskegee Institute. A total of 2,909 patients was seen in the combined clinical program.

(6) *Consultation*—The Division has also provided consultation services in the area of mental health to the Alabama Association for Mental Health, the Jefferson County Social Hygiene and Mental Health Association, the Montgomery Mental Health Society, the Muscle Shoals Mental Health Society, and to various state departments.

To aid in carrying out the above program, 6,200 copies of the Alabama Mental Health Bulletin have been distributed every month and a half. Thirty-six films were shown on an average of from 110 to 138 times a month. Twenty workshops were held throughout the State in addition to an innumerable number of group discussions and lectures.

During 1953 the Division is committed to co-operating with county boards of health to establish county divisions of mental health in Lee and Montgomery counties. It hopes to further expand its educational services along the lines of child study, family life, pastoral counseling and industrial mental health. Only as people have information can they know how to go about preventing mental illness. There is a constant demand for additional clinical services which can be met only as local communities can co-finance clinical facilities.

### *Public Health Education*

As in the past, the Division of Public Health Education concerned itself mainly with reaching the people of Alabama in the mass with information aimed at fortifying them against their disease enemies.

The two Montgomery daily papers published 509 news and feature articles during the year based upon releases issued by this Division. This was an average of slightly more than two a day, exclusive of Sundays, holidays, vacation periods, etc. Copies of the daily releases were made available, as in the past, to the two Montgomery dailies, the principal news services, and the five Montgomery radio stations. The practice of issuing a special weekly release to the weekly newspapers and the dailies outside Montgomery was continued. Although there was no means of determining how extensively the papers outside Montgomery published the Division's releases (received direct and through the news services), the limited information available indicates that both the daily and weekly releases were widely published.

The weekly State Health Chat was issued as in the past through the Associated Press.

The first full year of using tape recordings instead of electrical transcriptions of the weekly radio talks justified the belief that the change was a wise one. The tape recordings are much easier to handle, cheaper to ship, and much more satisfactory in other ways. Fifteen radio stations were receiving the tapes regularly. This arrangement greatly multiplies the geographic area and the number of people reached with these weekly health messages. Since the stations make no charge for broadcasting them, the cost is almost insignificant.

The practice of mimeographing these talks after they are tape-recorded was continued, and this mimeographed material, covering a wide field, was extensively distributed, not only in Alabama, but also in other states. It has proved especially useful in supplying requests for information on diseases and health problems. A considerable saving in cost was effected by the decision to discontinue mailing out these talks in envelopes and instead mail them flat with protective covers containing the names and addresses of the recipients.

Several new films were added to the Film Library. Sixty-four of the 67 county health departments were members in 1952, some borrowing many films and others being only occasional borrowers. To simplify shipping procedures and reduce the bookkeeping work of the Division of Finance, it was decided to abolish the practice of collecting from recipient county health departments postage paid on outgoing film shipments. Under the new arrangement all films (except a few which the Film Library was requested to ship by express collect) were shipped by ordinary parcel post, the postage being paid at this end. Borrowing county health departments were required to pay postage charges on films returned.

In spite of urgent requests to fill out and return the information card sent with each film, a considerable number of films are returned without these cards. So the information covering the number of showings for individual films and the total audiences is incomplete. However, the Film Library's own records show that 636 booking orders were filled. The information cards re-

turned show that the films with which they were returned were shown 801 times. The total audience which saw the films for which cards were returned is estimated at approximately 75,000.

Other activities were carried on as in the past. Health education material was distributed in booklet and mimeographed form. Editing of the Department's annual report was a Division responsibility. Considerable information was furnished by correspondence. The Division cooperated with other official and unofficial health agencies.

In preparation for the construction of the new state office building, the Division moved in mid-December from the State Health Department headquarters building at 537 Dexter Avenue to its temporary quarters at 320 Dexter Avenue.

#### *Machine Tabulation*

Acting in the capacity of a service unit, the Division of Machine Tabulation processed during 1952 work for various bureaus and divisions of the State Health Department.

For the Bureau of Preventable Diseases, indexes and statistical tables were prepared, as well as morbidity statistics on communicable disease for the Bureau's monthly and annual reports, and for the monthly and quarterly reports on the venereal diseases for the U. S. Public Health Service and the State Health Department.

For the Bureau of Vital Statistics, monthly indexes were prepared on currently reported birth, death and marriage certificates, divorces, stillbirths, and accidental deaths. Indexes and statistics were prepared quarterly and annually.

Work was completed on the re-indexing of births reported between 1917 and 1919 and in 1933. Re-indexing of marriages reported between 1936 and 1939 was also completed.

For the Bureau of County Health Work, a summary of the Monthly Activities Report was prepared quarterly.

For the Bureau of Maternal and Child Health, an annual report was prepared from the Monthly Activities Report.

Miscellaneous reports were prepared for the Bureaus of Sanitation and Laboratories and the Division of Finance.

There were 840,578 I. B. M. cards processed for various reports.

In July 1952, and again in September, machine rentals were reduced and personnel was reduced accordingly.

#### COUNTY HEALTH WORK

Activities and accomplishments in county health work in 1952 are reflected in the following consolidated report embracing all of the State's 67 counties.

##### Communicable Disease Control

|                                     |       |
|-------------------------------------|-------|
| Admissions to service .....         | 2269  |
| Consultations with physicians ..... | 1731  |
| Field visits .....                  | 5995  |
| Smallpox vaccinations .....         | 57732 |
| Diphtheria immunizations .....      | 14944 |



|   |        |  |        |
|---|--------|--|--------|
| Typhoid fever immunizations .....                             | 241698 | Dairy farms registered for supervision .....   | 3865   |
| Pertussis immunizations .....                                 | 2252   | Field visits to dairy farms .....  | 23436  |
| Triple vaccine .....  | 69166  | Milk plants registered for supervision .....   | 430    |
|   |        | Field visits to milk plants .....  | 7271   |
| Venereal Disease Control                                      |        | Special Control Services   |        |
| Admissions to service .....                                   | 14515  | Impounded water projects registered for supervision .....  | 2505   |
| Office and clinic visits .....                                | 37834  | Field visits to impounded waters .....   | 5054   |
| Field visits .....  | 7899   | Premises dusted for typhus control .....   | 19907  |
| Number of treatments given .....                              | 14651  | Field visits in typhus control .....   | 25705  |
| Tuberculosis Control  |        | Laboratory   |        |
| Individuals admitted to service .....                         | 29676  | Specimens examined .....   | 542887 |
| Office and clinic visits .....                                | 45797  |  |        |
| Field visits .....  | 2238   |  |        |
| Maternity Service   |        | Public Health Nursing  |        |
| Cases admitted to service .....                               | 37265  | <p>The personnel of the Division of Public Health Nursing consisted of a director, two general consultant nurses, a consultant in cancer control activities, and a clerk-stenographer. However, one of the consultant nurses was off duty three months during the year as a result of illness, thus decreasing the number of visits made by members of the supervisory staff. The annual count of nurses' reports revealed there were in the entire State 196 staff nurses and 21 supervisors—one less staff nurse and one more supervisor than in the preceding year. These figures include all counties, boards of education, and non-official agencies employing public health nurses. However, any figures quoted hereafter in this report will apply to 65 counties only, Jefferson and Mobile counties and other agencies being excluded.</p> <p>The procurement of nurses continued to be difficult. There were 14 new appointments and 21 resignations among the county nurses, many of whom gave as reason for resignation the acceptance of better-paying positions. Of the 14 new appointments, 4 resigned during the year. There were three transfers, one death, one lay-off due to lack of funds to cover salary, and 22 nurses granted sick and maternity leave for varying periods.</p> <p>Two counties, Limestone and Crenshaw, were without nurses for the entire year, and several others were not covered with nursing services for varying periods.</p> <p>For the above reasons, the number of home visits made was far short of the ideal for public health nursing. Also as a result of the shortage of consultant personnel, county nurses did not have adequate supervision to plan their activities to best advantage.</p> <p>The amount of supervisory and consultation service available to the county nurses, exclusive of Jefferson and Mobile counties, is grossly inadequate. The nurses are for the most part unprepared for the field of public health nursing, and, although an orientation center is set up in Opelika, many cannot attend as a result of family responsibilities.</p> <p>The position of consultant nurse in the Bureau of Maternal and Child Health had been vacant a long time because of inability to find a qualified person. Finally a nurse was selected and given scholarship aid to prepare herself for this position. Another nurse was employed by the Divi-</p> |        |
| Office and clinic visits .....                                | 53527  |  |        |
| Nursing visits .....  | 41863  |  |        |
| Maternal death investigations .....                           | 31     |  |        |
| Infant Hygiene  |        |  |        |
| Individuals admitted to service .....                         | 31908  |  |        |
| Office and clinic visits .....                                | 28926  |  |        |
| Nursing visits .....  | 39185  |  |        |
| Neonatal death investigations .....                           | 139    |  |        |
| Preschool Hygiene   |        |  |        |
| Individuals admitted to service .....                         | 25181  |  |        |
| Office and clinic visits .....                                | 23177  |  |        |
| Nursing visits .....  | 31271  |  |        |
| School Hygiene  |        |  |        |
| Inspections by physicians and nurses .....                    | 94143  |  |        |
| Examinations by physicians .....                              | 20739  |  |        |
| Individuals admitted to nursing service .....                 | 5913   |  |        |
| Nursing visits .....  | 12840  |  |        |
| Adult Hygiene   |        |  |        |
| Medical examinations .....                                    | 10831  |  |        |
| Morbidity Service   |        |  |        |
| Cases admitted to service .....                               | 3709   |  |        |
| Office and clinic visits .....                                | 4370   |  |        |
| Field visits .....  | 6217   |  |        |
| Cancer Control  |        |  |        |
| Individuals receiving diagnostic service .....                | 934    |  |        |
| Individuals receiving treatment service .....                 | 1207   |  |        |
| Individuals admitted to nursing service .....                 | 246    |  |        |
| Field visits .....  | 809    |  |        |
| Dental Correction Service                                     |        |  |        |
| Individuals admitted to service .....                         | 9574   |  |        |
| Office and clinic visits .....                                | 17570  |  |        |
| Inspections by dentists and dental hygienists .....           | 8664   |  |        |
| Prophylactic treatments given .....                           | 9366   |  |        |
| General Sanitation  |        |  |        |
| Approved individual water supplies installed .....            | 723    |  |        |
| Approved excreta disposal systems installed .....             | 8059   |  |        |
| Field visits .....  | 110437 |  |        |
| Protection of Food and Milk                                   |        |  |        |
| Food-handling establishments registered for supervision ..... | 38290  |  |        |
| Field visits to food-handling establishments .....            | 82258  |  |        |

sion of Cancer Control, and her orientation consisted of a week's intensive course at the University of North Carolina and six weeks at New York University and Memorial Hospital.

Only one nurse had a refresher course in Opelika in 1952. However, much progress was made in nurse education otherwise. The director of the Division of Public Health Nursing, cooperating with the University of Alabama, taught a 3-credit hour course, Introduction to Public Health Nursing, to public health and hospital nurses enrolled at the University, and the same course at the University Center in Montgomery to a similar group. From funds provided by the Children's Bureau, one-half tuition was paid for 33 nurses and full tuition for 21 nurses taking subjects required for the year's program of study in public health nursing education at the University or University Center; a two-day cancer institute was sponsored, travel and per diem expenses being paid, for 122 nurses representing the hospitals and public health field. Tuberculosis institutes were held in Mobile and Birmingham. Two nurses attended a heart disease institute in Pensacola, five a chronic disease institute in Atlanta and several others a rehabilitation institute in Birmingham. One nurse took a course in epidemiology at the Communicable Disease Center in Atlanta.

Two public health nurses were given scholarships for 9 months; two hospital nurses received scholarships for 9 months each; and one public health nurse and two hospital nurses were granted 6 weeks' scholarships in premature infant care.

Activities for the recruitment of student nurses were constantly engaged in by the members of the Division.

#### *Merit System*

During 1952 the Merit System for County Health Work conducted competitive examinations on an open-continuous basis for the following classes: Clerk I and Clerk II, Typist I, II and III, Sanitation Officer I and II, Scientific Aide, Sanitation Assistant, Meat and/or Milk Inspector, Graduate Registered Nurse I and II, Public Health Nurse I and II and Public Health Engineer. Examinations for several other classes were open but no applications were received. The number of applications received for these examinations totaled 119, of which 115 were acceptable and 115 also appeared for the examinations. From this number, 105 applicants made passing grades, 10 failed, and 105 names were placed on eligible registers. There were 60 appointments made from these registers and 21 appointments from eligible lists established previously.

In addition to appointments from eligible lists, 31 positions were filled on a provisional or temporary basis. There were 97 separations from service, which included 70 resignations, 1 dismissal, 13 lay-offs, 28 expirations of provisional or temporary appointments, and 2 deaths.

The Merit System Council approved revised salary ranges for the classes of Public Health Nurse III, Meat and/or Milk Inspector I and II,

Clerk I and II, Typist I, II and III, and County Health Officer I and II.

There were 2 employees who went on military leave during the year.

#### MATERNAL AND CHILD HEALTH

In an effort to improve health conditions for mothers and children, two new programs were inaugurated during the year. Through the efforts of the Association's Committee on Maternal and Child Health, composed of Drs. T. M. Boulware, A. E. Thomas and Hughes Kennedy, Jr., every maternal death occurring during the year has been investigated in an effort to discover the exact cause of death. The investigations have been made by specialists, for the most part Diplomates of the American Board of Obstetrics and Gynecology. These investigations were conducted on a voluntary basis, with only mileage being paid for by this Department.

The investigator interviewed the person signing the death certificate, reviewed the patient's chart if the death occurred in a hospital, and interviewed the patient's family if indications called for that. The completed reports, with all identification removed, were turned over to the Committee for evaluation and discussion. Final comments and classification will be made by the Committee.

The second program was offered in cooperation with the School of Dentistry, University of Alabama, Birmingham. Observation has shown that in many communities, especially in rural areas, adequate dental services for children are not available. In many instances this inadequacy of service could be traced to lack of knowledge on the part of the practitioner in handling and treating child patients. This program was offered to encourage the treatment of such patients and to make the treatment more effective and enjoyable. These concentrated courses were given by the faculty of the Dental School and were of one week's duration. They consisted of lectures, demonstrations and clinical practice. The course was limited to nine students at each of three sessions, with 27 dentists attending. The cost of the course and a small stipend to dentists outside the Birmingham area were paid by funds made available by the Children's Bureau.

Much interest is still being displayed in the prenatal, well baby and dental clinics throughout the State. Although funds available for such clinic services were much less than anticipated for the first half of the year, there were 94 maternity clinics conducted in 53 counties with 42,753 patients admitted and 141 physicians participating.

There were 39 well baby clinics held in 26 counties with 71 physicians attending and 24,983 patients admitted.

A total of 58 dental clinics were held in 36 counties during the year. Participating in this program were 74 dentists, with 13,609 patients being admitted.

The Topical Sodium Fluoride Demonstration, consisting of only one dental hygienist, was on loan to the State by the U. S. Public Health Serv-



ice for seven months. During this time the team was assigned to four counties and treated 999 children.

Efforts were continued to have an approved baby incubator placed in each county. At the end of the year eighty portable incubators had been distributed to forty-five counties.

The Bureau continued to furnish funds to provide pertussis and triple vaccine immunizations to older children and infants unable to obtain this protection through other sources.

Because of the urgent need for additional consultant nurses and the unavailability of such qualified nurses, one well prepared nurse has been granted a scholarship for special training in the care of mothers and young children. After completing this training she will be added to the state staff. Funds from this Bureau have also been made available to hospital nurses for courses in maternal and child health, particularly in the care of premature infants.

The Macon County Maternity and Infant Care Program continued to provide care for colored maternity cases and sick infants. In addition to its regular services, a pathological obstetric clinic was opened. Suspected abnormal cases may be referred here for laboratory tests or x-ray examinations without being admitted to the hospital. Statistics for this program will be set forth in the printed annual report.

The recognition of malnutrition as one of the major problems was the first step in planning nutrition services in the State. Through maternity, well-child, chest, and crippled children's clinics and school examinations, it was revealed that many families and individuals in Alabama are not eating the kinds of foods they should have. In an attempt to help these people to a better understanding of the relation of food to health, the Division of Nutrition concentrated its efforts on the various clinics and the school lunch program. This service was rendered through demonstrations, exhibits, literature, films, and cooperation with workers in allied fields on the local level. The newer techniques were the tools with which we did our professional work in an effort to motivate the people concerned to use this information. This was done on both an individual and a group basis. In 1952, in addition to conferences with county health officers, nurses and sanitarians, 68 clinics with an attendance of 1182 patients received direct service during the year.

Fifty-seven schools were visited and suggestions relative to improvement in the selection and preparation of food and service were made when indicated. Methods for making the school lunch educational were demonstrated to teachers in schools requesting such service. Two workshops on the state level for school lunch managers were assisted; 420 managers attended.

Nutritional standards for child-caring institutions and nursing homes were set up with the assistance of members of the University staff and Extension Services.

In recognition of the challenge to seek cooperation of other state workers concerned with nutrition education, a meeting was called in Birm-

ingham for November 14, 1952, and representatives from all state agencies, colleges and the University attended. Specific activities in which each agency can make a definite contribution were suggested, and it is hoped that something worth while will eventually be worked out.

#### LABORATORY ACTIVITIES

The Bureau of Laboratories examined 612,686 specimens during 1952, as compared to 536,036 in 1951. For the first time in several years, the Montgomery laboratory ran more tests than any of the branch laboratories, as a result, for the most part, of increased work loads in tuberculosis and parasitology, though a fair share of the work was provided by the venereal disease program. Specimens examined in the branch laboratories increased in the Decatur, Tuscaloosa and Montgomery laboratories as compared to 1951. The Montgomery laboratory increase over that for the previous year amounted roughly to 80,000 specimens.

In 14 counties 42,962 stool specimens were examined for hookworm by the Central Laboratory. Many of these cases were in highly selected areas, but the overall ratio of positives was 18%, a truly remarkable decrease from former figures. Continued effort in this field could possibly eradicate hookworm in the next five years. The parasitology laboratory has instituted new procedures for the detection of protozoa and, though applied on a limited scale, has produced highly consistent and accurate results. In this same division the routine testing of all diphtheria cultures was instituted to determine virulence.

Cultures numbering 15,130 were made in 1952. Of this number, 4,388 were positive, 9,650 negative and 876 unsatisfactory, while 204 showed growth of acid fast saprophytes. Animal inoculations were done with 427 tuberculosis specimens. Of this number 63 were positive, 354 negative and 10 unsatisfactory. Positive cultures were obtained on 1,880 specimens on which direct smears were negative. This latter figure certainly shows the wisdom of routine culturing on all specimens received. A research program involving the use of penicillin blood agar was carried along side by side with the routine work for the purpose of evaluating the blood agar media. This doubled the work, although no increase in personnel was used.

Premarital licenses have been issued to 22 private laboratories for the performance of premarital blood tests. As in 1951, 200 check specimens were sent out at monthly intervals to evaluate the performance of each laboratory. The number of laboratories increased from 20 in 1951 to the already mentioned 22 in 1952. These, with the branch laboratories, gave a total of 32 laboratories offering this service to the State. The private laboratories ran a total of 4,405 specimens, while the public health laboratories ran a total of 36,016. No permits were withdrawn except when the technicians left their positions and the hospitals were unable to replace them.

There was a 67% increase over 1951 in the number of positive heads examined, involving a total of 1,222 examinations for rabies. The rabies

inspectors reported that 117,289 dogs were vaccinated during 1952.

There was an increase in the use of antirabies vaccine over 1951, with decreased amounts of diphtheria toxoid, typhoid vaccine, Shick test and silver nitrate ampoules.

The number of cases of typhoid isolations was double that for 1951, with the less important *Salmonella* being of about the same number as the previous year. *Shigella* isolations were approximately the same as the preceding year. Thirteen isolations of *Brucella abortus* were made during the year, and the epidemiologic investigation of *Brucella* infection among veterinary students is continuing into its second year. This will be a five-year project. Three isolations have been made on veterinary students up to date. During the year an article on *Brucellosis* was submitted for publication, which gave in detail the results of approximately 13 years of work in Alabama. Incidentally, the report shows that the Alabama Bureau of Laboratories has been able to isolate the largest number of positive blood cultures which have been isolated by any public health laboratory in the United States.

Two members of the Central Laboratory staff attended courses at the Communicable Disease Center in Atlanta. The State Department of Health, in cooperation with the Communicable Disease Center, presented a three-day course in parasitology for all interested technicians around the State, and approximately 20 students were in attendance.

During 1952, 1,219 specimens were forwarded through the Central Laboratory to the Communicable Disease Center.

#### PREVENTABLE DISEASES

Most communicable diseases stayed within their pattern, with some slightly up and others slightly down, but the swing was within normal range.

Poliomyelitis in Alabama has made its grandstand appearance every five years. The number of cases (296) reported in this off-year was slightly higher than in previous non-epidemic years. But this disease has displayed a tendency to increase its normal incidence gradually.

Diphtheria remained a problem, with 342 cases being reported. This represented a 31-case increase over the previous year. With a definite preventive, this disease could be brought to its knees by mass immunization. But the constant urging for immunizations has kept it relatively confined. The spectre of an epidemic is ever-present if any marked decline in immunization should occur.

Typhoid fever also remained a problem. Although 57 cases do not constitute a large number, still they provide a great enough reservoir to make an epidemic possible if there ever should be any abatement in the preventive measures against this disease.

There were 1,232 cases of infectious hepatitis reported. This disease has an epidemiology similar to that of typhoid fever. Application of these

principles and the use of gamma globulin as a preventive may bring about a decline in the future.

There were 4,784 cases of cancer reported, with 426 of these being treated in the state tumor clinics. Although 1,275 persons applied for state aid, 647 could not be treated because of lack of funds.

The multiple screening program was carried to eight counties but only five of these had mass or spot surveys for syphilis.

There were 112,231 individuals x-rayed for tuberculosis and heart disease. Of these, 183 were found to have tuberculosis; 244 had other lung pathology, and 249 had heart disease. From both the mass survey and the diagnostic survey, 341 new cases of tuberculosis were reported, and from all sources 2,448 new cases became a matter of record.

From the 48,041 individuals blood-tested, 792 new cases were found to be infected with syphilis. But from all sources 2,751 cases of syphilis were found. These figures reflect the declining effectiveness of mass blood-testing as a weapon of control and the increasing effectiveness of epidemiologic investigators when the problem has been reduced.

#### GENERAL SANITATION

During 1952 there were approved by county sanitation officers and reported to the Bureau of Sanitation 1,293 pit privies, 6,366 septic tanks and 5,642 sewer connections, or a total of 13,301 new units of sanitation. This sanitation served 71,750 people of the State. Eight hundred eighty one (881) sanitation units, serving a population of 14,845, were restored to former usefulness and protection to the public health. It is thus seen that 86,595 people were benefited by the 14,182 new and restored installations.

The county sanitation officers should derive great satisfaction from their accomplishments. They should, however, appraise their work to determine means of increasing them in the sub-urban and rural areas.

Other accomplishments during the year include: adoption of more comprehensive sanitation regulations by the State Board of Health; holding five group meetings at various points in the State to explain and discuss provisions of the above regulations; revision of the septic tank bulletins to conform to the regulations; preparation, for use by county health departments, of sanitation permit forms; formulation of a cooperative working agreement with the Veterans Administration similar to the one with the Federal Housing Administration; and completion of an agreement with the State Department of Education with regard to the ratio of toilet seats, urinals, lavatories and drinking fountains to pupils enrolled in schools.

#### Vector Control

In June of 1952 it was believed advisable to combine and coordinate the duties of the Division of Malaria Control and the Division of Typhus Control. The Division of Vector Control, as it is now designated, is a result of this decision.



Thorough coordination of these programs at both state and local levels may be expected.

Twenty-seven major impoundages were on record in 1952. Big Creek Reservoir, water supply for the city of Mobile, was impounded during the year. *Anopheles quadrimaculatus* control was generally good, with two exceptions. Gantt Lake production was higher than it had been during the four previous years, but not dangerously high. Big Creek Lake, because of failure on the part of a contractor and the critical need for water, was impounded without complete clearing. Reporting of mosquito collection and larviciding was incomplete and unsatisfactory, but it did show *A. quadrimaculatus* production at levels generally considered dangerous. *A. quadrimaculatus* control on the T. V. A. lakes was good, production being considerably lower than in the previous year. Good progress was made on permanent shore-line improvement work on Wheeler Lake, with similar work on Guntersville Lake scheduled for completion in 1953.

Minor impounded water projects on record increased in number from 5,297 to 6,206 during 1952, with a proportionate increase in field inspections and clerical work. In new pond preparation, compliance with the regulations was generally good. This was due in large part to the agreement with the Conservation Department to withhold issuance of fish until authority to impound is granted.

Autauga, Crenshaw, Lowndes and Marengo counties carried on county-wide residual spraying of rural houses and outbuildings. Premises

totaling 16,455 were treated in these four counties. Communicable Disease Center trucks were loaned to the counties for this program, and insecticidal materials were provided from C. D. C. stocks. All other costs were borne by the counties. Wilcox county operated a similar program in selected areas, treating a total of 2,437 premises.

Municipal fly and mosquito control programs were carried on in 31 municipalities. C. D. C. trucks were loaned to those municipalities which needed them for these programs. Total estimated cost of fly and mosquito control has been lumped with rodent control, and the total cost by counties is shown on the accompanying map.

The Colbert county drainage program shut down as usual with the onset of winter weather. Initial construction of drag-line ditching was nearly complete. Considerable maintenance work is anticipated in 1953.

During 1952 23 cases of murine typhus fever were reported, only 4 cases being confirmed by complement fixation tests. Fourteen cases are pending confirmation.

Typhus control activities included advisory and supervisory service in rat proofing, rat stoppage, rat extermination surveys, rat extermination campaigns, sanitation officer training schools, DDT dusting programs, educational campaigns, commercial exterminator activities, and the collection of entomologic data. These activities were conducted by Federal, state, county and city personnel with the necessary material furnished by the agencies concerned.

Tabulated reports show the following: 77,112 premises inspected; 50,863 premises treated; 101,871 pounds of 10% DDT powder applied; 26,444 pounds of rodine poison bait used; 950 pounds of Warfarin poison bait placed in bait boxes; 6,215 pounds of hydrocyanic acid gas used for gassing rat harbors; and 18,881 pints of arsenic water released. A total of 68,663 manhours of supervision and labor was furnished by the U. S. Public Health Service, exclusive of 8,730 manhours of supervision and labor furnished by state, county and cities participating.

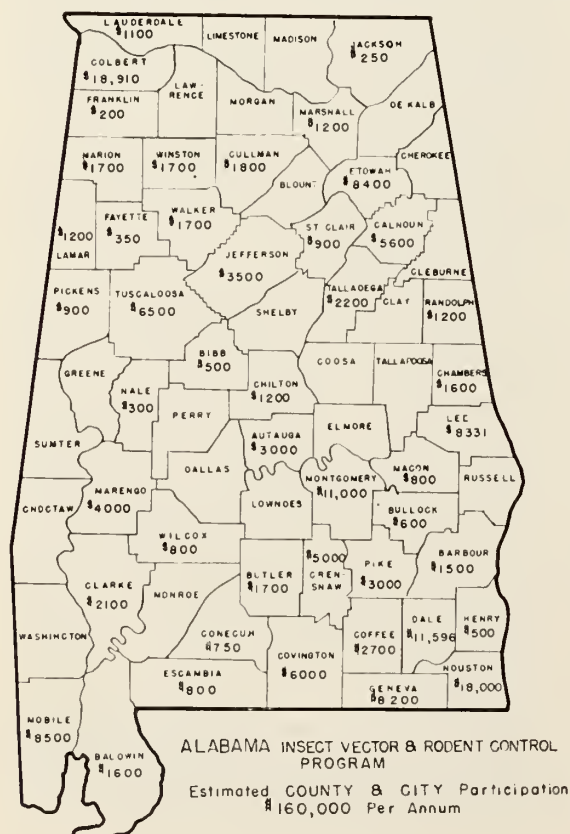
Extermination programs, urban and rural, were conducted in 17 counties, including 41 municipal programs.

Entomologic and evaluation studies were conducted in counties in the highly endemic area.

A project designed to eradicate typhus fever was established in Geneva county through funds allocated by the U. S. Public Health Service. Records involving all methods and stages of operation were developed and maintained. Analysis of these records is a continuous procedure. This demonstration is to continue through 1954.

Information and experience gained through operation of similar county projects since 1945 tend to give assurance to the belief that typhus fever will be controlled and the rat and flea population reduced when organized technical measures are applied.

In addition to routine entomologic work on *Aedes aegypti*, a survey was made in Mobile,



Montgomery and Birmingham by the C. D. C. entomologist. Results were prepared for publication. The entomologist and engineers of this Division also started a survey of pest insects, particularly mosquitos and biting flies, in the coastal area of Baldwin county. It is planned that this study will continue over at least one or two years.

This Division was given at mid-year the responsibility for providing consultative service on municipal garbage operations. During the latter part of the year surveys were made on request in a few cities and recommendations made for improvements in garbage handling and disposal. Plans are being formulated for a statewide approach to this problem during 1953.

#### Public Water Supplies

On December 31, 1952, there were 320 recorded public water supplies in the state of Alabama, serving approximately two million people. Two hundred and seventy-two plants were engaged in the production of water, and the remaining forty-eight were dependent supplies. During the year six new supplies were constructed, one of which is classed as a dependent supply.

A major activity of the Water Division of the Bureau of Sanitation is the general supervision of public water supplies. In this connection 253 water plants were inspected one time during the year. Twenty-five plants were visited twice, and three were visited three times. During these visits the general condition of the systems, operating procedures and bacteriologic and chemical qualities of the water were noted. When required during these visits the personnel was instructed in proper operating procedure and responsible officials given advice concerning water works problems. As a further control of water quality, the Water Division interpreted the analysis of 19,722 samples submitted by the suppliers to the Bureau of Laboratories for bacteriologic analysis.

Some major type of work on forty-six water works systems costing an estimated \$6,236,000 was completed during the year. Despite the control of critical construction materials, there were under construction at the end of the year twenty-two projects involving a cost of \$2,421,000.

The review of plans and specifications, conferring with consulting engineers regarding water supply projects, and the issuance of permits constitute an important phase of the Water Division engineers' work. Permits were issued for forty-nine projects for construction of either new sources of water or modifications, alterations and additions to existing systems. This proposed work will cost approximately \$4,333,000.

The annual short course school for water and sewage works personnel and the meeting of the Alabama Water and Sewage Association were held in June at the Alabama Polytechnic Institute, Auburn. The school and the meeting, sponsored by the State Health Department, the University of Alabama and the Alabama Polytechnic Institute, were well attended. After examinations were given at the end of the school, twenty-one certificates of competency were awarded to water works operators, thus making a total of

sixty-three water works operators certified. The Bureau of Sanitation has taken a leading role in this work. In addition to the school activities it assumed the responsibility of organizing and editing the Association's quarterly Official Bulletin.

During the year 1951 the policy of permitting the fluoridation of public water supplies was adopted and certain standards set which must be met if fluoride is to be added to a supply. At the end of 1952, Tuscaloosa and Sheffield were the only municipalities so treating their water. Numerous inquiries were received from municipalities and individuals regarding fluoridation.

Water Division engineers continued to cooperate with the U. S. Public Health Service in the program of certifying supplies for use by interstate carriers. They also aided in the training of new sanitation officer personnel.

#### Industrial Hygiene

The Division of Industrial Hygiene started the year 1952 as an integral part of the Bureau of Preventable Diseases. On January 15 it was transferred to the Bureau of Sanitation, and the director of the Division of Environmental Sanitation was designated as Director of the Division of Industrial Hygiene. The personnel of the Division consisted throughout the year of the director, an engineer, a chemist and a clerk-stenographer.

Plant visits were made to a variety of industries throughout the State, and in most cases complete plant studies were made. A total of 134 plant visits was made. These visits covered plants employing a total of approximately 25,000 persons. Laboratory determinations for the year numbered 175.

During the year considerable progress was made toward formulation of working agreements and friendly relations with other official agencies. A study was made of the operational procedures of other state industrial hygiene groups and work begun on establishment of a positive program for industrial hygiene in Alabama. In this connection, a countywide study of the industries in Montgomery county was started; preliminary investigation of the hazards associated with the manufacture and use of Parathion was undertaken; and the public health significance of the use of thermal generators for insecticides was begun.

#### Inspection Activities

There were 700 establishments in the State for which State Department of Health personnel was directly responsible. These included 222 hotels, 128 carbonated beverage plants, 8 milk products plants, 160 ice cream and freezing establishments, 184 food manufacturing establishments which sell inter-county, 12 crabmeat picking and shrimp cooking plants, and 56 oyster shucking plants. There were also approximately 240 meat plants, including slaughter houses, quick-freeze locker plants, sausage manufacturers and commercial fowl slaughter and dressing establishments, under joint supervision of the state and county health departments. Motels are not included



with the hotels, and because of the lack of proper regulations, except in a few counties, they are not under the supervision of either the county or state health departments.

County food inspection programs during the year showed very little change from the previous year. A few counties showed some increase in these activities by being able to make personnel shifts and in some cases employed additional personnel.

#### Food Sanitation

Food sanitation ratings were made in nine of the sixty-seven counties, as compared to twenty-seven counties in 1951. The numerical average score of these is 87.72, as compared to 89.49 in 1951. Even though the average rating figure for the nine counties surveyed was slightly lower than that for the twenty-seven counties made in 1951, there is visible evidence that progress is being made in the physical structure of the establishments, types of equipment and methods of operation. However, to have proper coordination between county and state food inspection programs these surveys should be made of each county's food establishments annually. Because of a shortage of state field personnel, the number of counties surveyed has shown a big drop per year since 1946, when every county that had a food inspection program in operation was surveyed.

#### Milk Sanitation

The first State Milk Control Regulations were adopted on January 7, 1929, by the Alabama State Board of Health. They were effective in a county, municipality or community after they have been adopted as an ordinance or by indorsement by the authorities having jurisdiction and an effective date had been declared in the county, municipality or community where adopted by the State Health Officer. The regulations were amended in 1939 and 1950.

Various types of ordinances were adopted between 1929 and 1952 by municipalities for the purpose of controlling the quality of milk offered for sale within their limits. Unfortunately, some of these developed into trade barriers at the county lines of the counties in which some municipalities were located, not intentionally, but it happened so, because of the complication on inspection requirements. This inspection complication was recognized by the State Health Officer. In March 1952, he requested the drafting of regulations which, when adopted, would advance uniform control throughout the State and at the same time facilitate the application of safeguards of known efficiency to the production and pasteurization of milk. After various conferences between twelve county health officers and six sanitation officers responsible for county control programs, the regulations were drafted and prepared for adoption by the State Committee of Public Health. They were adopted on April 17, 1952. The model regulations have been adopted and placed in effect on a county-wide basis in six counties and by fourteen municipalities located in other counties.

During the year thirteen milk sanitation ratings were made. Six of them covered sheds

where both raw and pasteurized milk is for sale to the consumer, whereas the remaining seven covered sheds requiring all milk for distribution to be pasteurized. The weighted average rating of the retail raw milk was 81.72, as compared to 82.96 in 1951, while that for pasteurized milk was 89.49, as compared to 88.14 in 1951.

There are 101 pasteurization plants, 31 grade A raw retail dairies and approximately 2,200 dairy farms under the supervision of the county health departments of the State. As the majority of the plants are inter-county establishments, the inspection of them becomes a State Health Department function. During the year seven of the smaller producer-distributor plants operating in 1951 either combined with larger plants or discontinued operations altogether. These pasteurization plants and the few retail raw milk dairies of the State deliver daily approximately 120,000 gallons of milk and milk products to the consuming public. Ninety-five per cent or more of the State's commercial milk supply is pasteurized. Pasteurized milk is available in every county of Alabama. In fact it is available in most every community throughout the State.

#### Oysters and Crabmeat

There were 287 inspections made of oyster and crabmeat processing establishments during the year. Of these establishments, 56 were given Alabama permits for shucking oysters, and 12 permits were granted to crabmeat processing plants.

A surveillance sanitary program was carried on in the vicinity of the oyster beds adjacent to Mobile and Baldwin counties. The program required the taking of water samples from the Cedar Point area for bacteriologic examinations. Two hundred forty (240) water samples were taken for this purpose, and, as in previous years, the bacteria count, based on the examination of these samples, started to rise about December 1 as the elevation of the rivers above the Bay area showed a rise due to flood waters. It became necessary from a public health standpoint to close certain oyster beds in March 1952, and the high bacterial counts shown from the examination of water samples taken from the Bay during September, October, November and December of 1952 indicate that it may be necessary to close the beds in 1953.

An effort is being made to revise almost all the regulations under which the Inspection Division operates. These regulations must be revised to cope with new equipment and operation procedures that have been put into use during the last few years. Regulations for controlling the poultry industry have been drafted, and the food regulations have been revised. They are being reviewed by county personnel looking forward to adoption by the State Board of Health.

#### Drafting

For the year 1952 the Drafting Section concentrated its activities upon maps, charts and other graphic material needed for the Health Department. Because of the acute shortage of personnel, the efficiency of the drafting room was impaired. However, every effort was made to pro-

vide as nearly as possible all material and work as requested.

Sketches, charts, maps and plans came into the drafting room and were worked up. Statistical data for charts in the various bureaus were recorded on permanent tracings. Charts and maps for annual reports, stencils, forms and all related material came as a part of the duties in the Drafting Section.

Drawings were made in connection with the compilation and preparation of the State Health Department Bulletin S-2, The Use and Construction of the Concrete Septic Tank for Four Bedrooms or Less. Plans for the construction of removable forms for septic tanks were remade in accordance with changes made in Bulletin S-2.

Revisions were made for the Division of Inspection in the 8-cow milk barn with milk and feed rooms.

A considerable amount of work was done for the Water Improvement Advisory Commission on charts, forms and reports in the assembling of data on industrial wastes. A number of maps and charts were also made of Mobile Bay and vicinity giving data on the status of the oyster reefs in that area.

A cover design and charts were made for the Nursing Home Manual, prepared by the Hospital Planning Division.

New sanitary survey maps were made as needed and all surveys sent into the Department were brought up to date.

Plans and profiles on the installation of sewage disposal systems for schools and other community centers numbered 22.

Routine work in the indexing of bulletins and magazines for the technical library of the Bureau of Sanitation lagged because of the pressing drafting needs.

All water and sewer plans were indexed and hung in the hanging files. Maps, charts and sketches made during 1952 were:

|                                       |     |
|---------------------------------------|-----|
| Small charts.....                     | 37  |
| Large charts.....                     | 32  |
| Small sketches.....                   | 7   |
| Small sketch maps.....                | 2   |
| Large sketch maps.....                | 3   |
| Plan and profile (sewage).....        | 22  |
| Sketch maps and sanitary surveys..... | 8   |
|                                       | 111 |

Miscellaneous stencils, posters, placards.....183

#### VITAL STATISTICS

Alabama experienced in 1952 another year of high birth rates and low mortality, with substantial reductions in death rates associated with tuberculosis, venereal diseases, childbirth and infancy.

The Bureau of Vital Statistics received during the year more than 172,000 pieces of mail concerning vital statistics. A total of \$44,950 in statutory fees was collected for record certification services. A total of 75,432 certified copies of vital records was issued, including 3,853 gratui-

tous copies issued on request of the Veterans Administration. In addition to full certified copies issued, confirmations of record content were furnished in 54,333 cases involving Social Security, retirement, family allotments, welfare payments, armed forces recruiting, criminal investigations and prosecutions, estate settlements, income tax waivers, citizenship transactions, applications for drivers' licenses, employment by minors, athletics participation and other needs. This service is usually rendered directly to the agency or official concerned. Thousands of record searches were made from which no formal verifications were issued.

A total of 130,909 original records was filed for the following events: 81,550 births, 26,979 deaths, 2,127 stillbirths, and 20,253 marriages. In addition, 9,300 transcripts of divorce decrees and approximately 40,000 reports of premarital physical examinations and blood tests were recorded. Revised certificates were prepared and filed for 887 adoptions, 595 legitimations and 16,943 delayed records of births.

The Records Division processed 11,650 correction affidavits; this is 350 fewer than the number of records corrections handled in 1951. Queries numbering 5,061 were mailed to physicians, hospitals and other local sources for the purpose of obtaining additional information to complete or correct death certificates and promote accuracy of mortality data. Satisfactory and usable replies were received from 4,266 queries. Special queries were made on 856 deaths reported as accident fatalities. A special system of accident fatality reporting is operating in several police jurisdictions, with cooperative exchange of information with the State Department of Public Safety and the National Safety Council.

Some further improvement has been made in the completeness and timeliness of birth registration. However, death and stillbirth registration is below the desired standard. Many physicians seem to feel that stillbirth certificates have little value. Actually these records furnish our only source of data on fetal deaths. Infant death certificates and birth certificates for infants who live for only a short time are also quite important because of their statistical value in infant and maternal mortality studies.

#### VITAL STATISTICS TRENDS

##### Deaths

The general rate of mortality dropped back to the 1950 figure of 8.6 per 1,000 population, which is the same as the average rate for the 1946-1950 period. There was actually a slight decline in the number of deaths (26,979) recorded in 1952. These figures are provisional and will be enlarged somewhat by late registrations.

##### Infant Deaths

A total of 2,999 infants less than one year old died in 1952. The resulting mortality rate of 36.8 per 1,000 live births is precisely the same as the 1951 rate and is slightly less than the average rate (38.2) covering the previous five-year period. Further progress is denoted in saving the lives of newborn infants. In 1952 the neonatal death rate declined to a new low of 23.6; 749 in-



fants died, at the rate of 9.2 per 1,000 live births, from birth injuries, asphyxia and infections. Immaturity, alone, resulted in 637 deaths in 1952 and ranked as the seventh major cause of death. Other causes peculiar to early infancy took 200 lives. Only 22 deaths due to whooping cough were recorded during the year, but 186 children died from gastro-intestinal disorders, an increase of over sixteen per cent from the 1951 figure. This childhood disease has caused an increasing number of deaths for several years.

Stillbirths

The ratio of stillbirths to deliveries decreased last year. This measures to an extent the results of prenatal care and an increased percentage of hospital deliveries. A total of 2,127 stillbirths (25.4 per 1,000 deliveries) was recorded. The rate is about one per thousand less than the 1951 figure.

Maternal Deaths

A further substantial reduction was made last

year in maternal mortality. Diseases of pregnancy and childbirth caused 138 deaths at a rate of 16.5 per 10,000 deliveries. This is by a considerable margin the lowest maternal death rate in Alabama's vital statistics history.

Principal Causes of Death

The ten chief causes of death accounted for nearly seventy-five per cent of all deaths in the state last year. There was a net reduction of 350 in the death toll of these major killers. Tuberculosis dropped from sixth place in 1951 to eighth place in the order of importance. Nephritis and nephrosis jumped from eighth place in 1951 to sixth place the following year. Immaturity maintained its rank in seventh place. Diseases of the arteries ranked tenth in 1951 but assumed ninth place in 1952. The five leading causes have maintained their relative positions unchanged for several years. The cancer mortality rate for 1952 reached a new high point. Tuberculosis is the only major cause of death which has declined consistently for several years.

The Ten Major Causes of Death

| Cause                   | 1952<br>Provisional |       | 1951<br>Provisional |       | 1946-1950<br>(Average) |        |
|-------------------------|---------------------|-------|---------------------|-------|------------------------|--------|
|                         | Number              | Rate* | Number              | Rate* | Number                 | Rate*  |
| Diseases of heart       | 8,135               | 259.3 | 8,164               | 263.1 | 6,692                  | 221.4  |
| Vascular lesions        | 3,304               | 105.3 | 3,303               | 106.4 | 2,745                  | 90.8   |
| Malignant neoplasms     | 2,983               | 95.1  | 2,767               | 89.2  | 2,652                  | 87.7   |
| Accidents               | 1,946               | 62.0  | 1,962               | 63.2  | 1,855                  | 61.4   |
| Pneumonia               | 935                 | 29.8  | 1,085               | 35.0  | 1,100                  | 36.4   |
| Nephritis and nephrosis | 719                 | 22.9  | 726                 | 23.4  | 1,481                  | 49.0   |
| Immaturity              | 637                 | 7.8** | 781                 | 9.4** | 914                    | 11.1** |
| Tuberculosis            | 560                 | 17.8  | 792                 | 25.5  | 992                    | 32.8   |
| Diseases of arteries    | 448                 | 14.3  | 359                 | 11.6  | 295                    | 9.8    |
| Homicide                | 399                 | 12.7  | 374                 | 12.0  | 447                    | 14.8   |

\*Rate per 100,000 population.

\*\*Rate per 1,000 live births.

Heart disease, vascular lesions, nephritis and immaturity not comparable to five-year average, due to change in coding procedure.

Communicable Diseases

Major killers in this group underwent several changes in their relative positions. Influenza

maintained its established position in first place. Measles jumped from seventh to third position. Measles, meningitis and encephalitis caused more deaths in 1952 than they did the year before.

Deaths Attributed to Certain Communicable Diseases

| Cause                   | 1952<br>Provisional |       | 1951<br>Provisional |       | 1946-1950<br>(Average) |       |
|-------------------------|---------------------|-------|---------------------|-------|------------------------|-------|
|                         | Number              | Rate* | Number              | Rate* | Number                 | Rate* |
| Influenza               | 268                 | 6.5   | 300                 | 9.7   | 289                    | 9.6   |
| Syphilis                | 113                 | 3.6   | 131                 | 4.2   | 264                    | 8.7   |
| Measles                 | 41                  | 1.3   | 21                  | 0.7   | 30                     | 1.0   |
| Meningitis              | 34                  | 1.1   | 30                  | 1.0   | 26                     | 0.9   |
| Poliomyelitis           | 24                  | 0.8   | 41                  | 1.3   | 16                     | 0.5   |
| Whooping cough          | 22                  | 0.7   | 44                  | 1.4   | 58                     | 1.9   |
| Diphtheria              | 20                  | 0.6   | 25                  | 0.8   | 28                     | 0.9   |
| Encephalitis            | 15                  | 0.5   | 9                   | 0.3   | 7                      | 0.2   |
| Typhoid and paratyphoid | 2                   | 0.1   | 3                   | 0.1   | 5                      | 0.2   |
| Malaria                 | 2                   | 0.1   | 2                   | 0.1   | 19                     | 0.6   |

\*Rate per 100,000 population.

### *Births*

The birth rate declined last year after a slight increase in 1951. Indications are that the prevailing high rate will continue, given impetus by favorable economic factors and unsettled world affairs.

### *Marriage and Divorce*

A further drop in the number of marriages was recorded. The number of divorces increased. The ratio of marriages to divorces (20,253 marriages and 9,300 divorces) was slightly more than two to one. This is not a reliable index, however, because many Alabama couples marry in other states.

## REVISION OF THE ROLLS

The next order of business being the revision of the Rolls of the Association, the Secretary was directed by President McNease to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate; and, third, dues are to be remitted for each member not exempt from payment of dues."

With this foreword, the revision proceeded.

### *1. Revision of the Roll of County Societies:*

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Baldwin, Bibb, Blount, Bullock, Calhoun, Chambers, Chilton, Clay, Cleburne, Coffee, Covington, Crenshaw, Cullman, Dale, Dallas, DeKalb, Elmore, Escambia, Etowah, Fayette, Franklin, Geneva, Henry, Houston, Jackson, Jefferson, Lamar, Lauderdale, Lawrence, Limestone, Lowndes, Macon, Madison, Marengo, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pickens, Pike, Randolph, Shelby, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Wilcox, Winston—Total 53.

(b) County societies partially delinquent: In that they are not represented by delegates at this meeting of the Association: Barbour, Butler, Cherokee, Choctaw, Clarke, Colbert, Conecuh, Coosa, Greene, Hale, Lee, St. Clair—Total 12.

(c) County societies totally delinquent: Russell, Washington—Total 2.

No objection being made as to the correctness of this report, the President directed the Secretary to write the societies delinquent in report and dues and, failing to remove the delinquencies, to call the societies to the attention of the State Board of Censors.

Whereupon the Roll of County Medical Societies was declared closed until the next annual session of the Association.

The Secretary then said:

"In revising the Roll of Counsellors, five lists are prepared, designated respectively: (1) the schedule of counsellors clear on the books; (2) the schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) the schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the state, or out of their respective congressional districts; (4) the schedule of active counsellors of twenty years' standing; and (5) the schedule of counsellors-elect who have qualified as provided in the Constitution."

With such preface, the revision of the rolls was continued.

### *2. Revision of the Roll of Counsellors:*

(a) Counsellors clear on the books: Abbott, Acker, Alison, Allgood, Barber, Barnes, Baumhauer, Bell, Belue, Boyd, Bragg, Branch, Brown, Brunson, Carraway, Carter, Chenault, Cloud, Clyde, Cocke, Collier, Conwell, Crawford, Darby, Daves, Davis, Denison, Dodson, Donald, D. C. and J. M., Eskew, Finney, Foshee, Gibson, Gill, Gipson, Givhan, Gladney, Godard, Golden, Grote, Harper, Hill, R. C. and R. Lee, Hodges, Hollis, Holloway, Isbell, Jackson, Jones, Kennedy, Killingsworth, Leatherwood, Lisenby, Littlejohn, Mazyck, McCown, McNease, Meadows, Moore, Morgan, J. O. and J. Ralph, Neal, Owings, Parker, Partlow, Riggs, Riser, Roan, Robinson, Salter, P. P. and W. M., Samford, Segrest, Sewell, Sherrill, Simpson, Skinner, Smith, Stabler, Stallworth, Thacker, Underwood, Waters, Watson, Weldon, Whiteside, Wilkerson, Wilson, Woodruff.

In the absence of objection, the President ordered passed the names of these Counsellors reported as clear on the books.

(b) Delinquent Counsellors: None.

(c) Miscellaneous Counsellors:

(1) Life Counsellors who have died: Drs. R. S. Hill, J. C. Martin and J. M. Mason.

(2) Active Counsellors who have died: Dr. C. E. Ford.

(3) Active Counsellors who have moved: None.

(4) Active Counsellors considered as resigned: Drs. C. T. Jones and H. M. Simpson.

(d) Active Counsellors of twenty years' standing: Drs. T. J. Anderson, W. A. Gresham, John A. Martin, L. D. Parker and J. D. Perdue.

(e) Counsellors-elect who have properly qualified: Drs. D. P. Dixon and Landon Timberlake.

The President directed that the names of the deceased Counsellors be transferred to



the Book of the Dead; that Drs. T. J. Anderson, W. A. Gresham, John A. Martin, L. D. Parker and J. D. Perdue be transferred to the Roll of Life Counsellors; and that to the Roll of Active Counsellors there be added Drs. D. P. Dixon and Landon Timberlake.

Thereupon the roll of Counsellors was declared closed until the next annual session of the Association.

### 3. Revision of the Roll of Correspondents:

The Secretary reported that no revision is in order at this time.

### 4. Revision of the Roll of Officers:

Dr. Joseph M. Donald, Birmingham, was chosen President-elect, Dr. W. R. Carter, Repton, Vice-President of the Southwestern Division, Drs. John L. Branch, Montgomery, and J. O. Finney, Gadsden, Censors for five years; and Dr. Hugh Gray, Anniston, Vice-President of the Northeastern Division to complete the unexpired term of Dr. J. O. Finney who had been elected a Censor.

Committees constitutionally provided to nominate Counsellors brought in the following nominations, and the nominees were elected by the Association: 1st District—Drs. W. T. Cocke and Gayle T. Johnson; 2nd—Drs. N. W. Killingsworth, L. L. Parker, A. J. Treherne and H. W. Waters, Sr.; 3rd—Drs. F. H. Boyd and M. W. Samford; 4th—G. E. Newton; 5th—Drs. R. J. Guest and J. O. Morgan; 6th—Dr. Donald Smith; 7th—Drs. L. C. Davis, R. Lee Hill and W. E. Wilson; 9th—Drs. J. M. Donald, E. G. Givhan and John D. Sherrill, Jr.

### Miscellaneous Business

#### Expression of Thanks

Resolution was adopted thanking the Jefferson County Medical Society for an outstanding meeting, with enjoyable social events; and to all individuals, institutions and agencies for the many courtesies extended the Association.

#### Meeting of 1954

Invitation was accepted to meeting in Mobile, April 15, 16 and 17.

#### Installation of Officers

President-elect Morgan was installed as President and, in accepting the gavel, presented Dr. McNease his past-president's pin. Dr. Morgan then installed his fellow officers, and declared the meeting adjourned.

## THE ROLL OF COUNSELLORS

### REVISION OF 1953

#### LIFE COUNSELLORS

| Name and Address                      | Date of Election |
|---------------------------------------|------------------|
| Acker, Paul Jerome Morris, Mobile (1) | 1923             |
| Alison, Samuel Beekman, Minter (4)    | 1919             |
| Anderson, Thos. J., Greensboro (6)    | 1933             |
| Ashcraft, Virgil Lee, Reform (7)      | 1919             |
| Bedsole, James G., Jackson (1)        | 1922             |

|  |      |
|--|------|
| Burdeshaw, Shelby L., Headland (3)         | 1921 |
| Caldwell, Edwin Valdivia, Huntsville (8)   | 1918 |
| Cannon, Douglas L., Montgomery (2)         | 1928 |
| Chenault, Frank L., Decatur (8)            | 1917 |
| Craddock, French H., Sylacauga (4)         | 1932 |
| Dabney, Marye Y., Birmingham (9)           | 1923 |
| Garber, James R., Birmingham (9)           | 1932 |
| Granger, Frank G., Ashford (3)             | 1928 |
| Gresham, George L., Speigner (4)           | 1913 |
| Gresham, Walter A., Russellville (7)       | 1933 |
| Guice, Charles Lee, Gadsden (5)            | 1899 |
| Harris, Seale, Birmingham (9)              | 1903 |
| Harrison, William Groce, Birmingham (9)    | 1896 |
| Hayes, Charles Phillips, Elba (3)          | 1920 |
| Hayes, Julius Pope, Clanton (6)            | 1920 |
| Heacock, Jos. D., Birmingham (9)           | 1912 |
| Heflin, Wyatt, Birmingham (9)              | 1893 |
| Hill, Robert L., Winfield (7)              | 1924 |
| Howell, William Edward, Haleyville (7)     | 1918 |
| Howle, James Augustus, Hartselle (8)       | 1895 |
| Hubbard, T. Brannon, Montgomery (2)        | 1924 |
| Jackson, Alva A., Florence (8)             | 1918 |
| Lester, Belford S., Birmingham (9)         | 1923 |
| Lightfoot, Phillip Malcolm, Shorter (3)    | 1918 |
| Lull, Cabot, Birmingham (9)                | 1919 |
| Martin, John A., Montgomery (2)            | 1933 |
| McAdory, Edward Dudley, Cullman (7)        | 1920 |
| McCall, Daniel T., Mobile (1)              | 1923 |
| McLeod, John Calvin, Bay Minette (2)       | 1911 |
| McLester, James Somerville, Birmingham (9) | 1913 |
| Oswalt, G. G., Mobile (1)                  | 1929 |
| Parker, Lorenzo D., Andalusia (2)          | 1933 |
| Partlow, William Dempsey, Tuscaloosa (6)   | 1909 |
| Perdue, James D., Mobile (1)               | 1933 |
| Ralls, Arthur W., Gadsden (5)              | 1919 |
| Rucker, Edmon W., Birmingham (9)           | 1922 |
| Sankey, Howard J., Birmingham (9)          | 1914 |
| Scott, Walter F., Birmingham (9)           | 1922 |
| Searcy, Harvey Brown, Tuscaloosa (6)       | 1923 |
| Sledge, Edward S., Mobile (1)              | 1922 |
| Taylor, Woodie R., Town Creek (8)          | 1920 |
| Thigpen, Charles Alston, Montgomery (2)    | 1900 |
| Thomas, Eugene Marvin, Prattville (4)      | 1920 |
| Walker, Alfred A., Birmingham (9)          | 1923 |
| Walls, J. J., Alexander City (5)           | 1924 |
| Wilkinson, David Leonidas, Birmingham (9)  | 1902 |

Total 51

### ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.

Those marked with an asterisk (\*) are serving second terms of seven years.

Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

|  | Date of<br>Elec- tion | Expl-<br>ration |
|--|-----------------------|-----------------|
| Abbott, Chas. E., Tuscaloosa (6)       | †1952                 | to 1958         |
| Acker, Charles T., Montevallo (6)      | †1951                 | to 1957         |
| Alison, James F., Selma (4)            | †1948                 | to 1954         |
| Allgood, Homer W., Fairfield (9)       | *1951                 | to 1958         |
| Barber, William J., Butler (1)         | *1949                 | to 1955         |
| Barnes, J. Mac Ilwaine, Montgomery (2) | †1949                 | to 1956         |
| Baumhauer, Jacques H., Mobile (1)      | 1949                  | to 1956         |
| Bell, J. Mac, Mobile (1)               | *1950                 | to 1957         |
| Belue, Julius O., Athens (8)           | †1951                 | to 1957         |
| Boyd, Frank H., Opelika (3)            | †1953                 | to 1959         |
| Bragg, John C., Decatur (8)            | *1948                 | to 1955         |
| Branch, John L., Montgomery (2)        | *1951                 | to 1958         |
| Brown, Elridge T., Cleveland (7)       | †1951                 | to 1957         |
| Brunson, Emmett T., Samson (3)         | †1950                 | to 1955         |
| Carraway, Chas. Newton, Birmingham (9) | *1949                 | to 1956         |
| Carter, William R., Repton (2)         | †1948                 | to 1954         |
| Chenault, Erskine M., Decatur (8)      | †1949                 | to 1955         |

|   |               |
|---|---------------|
| Cloud, Robert E., Ensley (9).....                 | *1948 to 1955 |
| Clyde, Wallace A., Birmingham (9).....            | 1947 to 1954  |
| Cocke, William T., Demopolis (1).....             | †1953 to 1959 |
| Collier, James P., Tuscaloosa (6).....            | *1947 to 1954 |
| Conwell, H. Earle, Birmingham (9).....            | *1949 to 1956 |
| Crawford, Jas. M., Arab (5).....                  | 1950 to 1957  |
| Darby, Henry A., Athens (8).....                  | 1947 to 1954  |
| Daves, James G., Cullman (7).....                 | †1952 to 1958 |
| Davis, Lewis C., Gordo (7).....                   | †1953 to 1959 |
| Denison, George A., Birmingham (9).....           | *1950 to 1957 |
| Dixon, Duncan P., Talladega (4).....              | 1952 to 1959  |
| Dodson, Robert B., Cullman (7).....               | *1951 to 1958 |
| Donald, Dan C., Birmingham (9).....               | *1951 to 1958 |
| Donald, Joseph M., Birmingham (9).....            | *1953 to 1960 |
| Eskew, M. H., Uniontown (6).....                  | †1948 to 1954 |
| Finney, James O., Gadsden (5).....                | 1947 to 1954  |
| Foshee, Reuben A., Alexander City, Rt. 4 (5)..... | *1951 to 1958 |
| Gibson, Edward Lee, Enterprise (3).....           | *1947 to 1954 |
| Gill, Daniel G., Montgomery (2).....              | 1947 to 1954  |
| Gipson, Amos C., Gadsden (5).....                 | *1951 to 1958 |
| Givhan, Edgar G., Jr., Birmingham (9).....        | *1953 to 1960 |
| Gladney, James C., Jasper (7).....                | 1949 to 1956  |
| Godard, Claud G., Fairhope (2).....               | *1949 to 1956 |
| Golden, William C., Clanton (6).....              | *1951 to 1958 |
| Grote, Carl A., Huntsville (8).....               | †1951 to 1957 |
| Harper, Willam F., Selma (4).....                 | 1948 to 1955  |
| Hill, Robert C., York (6).....                    | †1950 to 1956 |
| Hill, R. Lee, Haleyville (7).....                 | †1953 to 1959 |
| Hodges, Rayford, Scottsboro (8).....              | †1949 to 1955 |
| Hollis, Murray C., Winfield (7).....              | 1951 to 1958  |
| Holloway, H. Sellers, Notasulga (3).....          | 1951 to 1958  |
| Isbell, Arthur L., Albertville (5).....           | *1947 to 1954 |
| Jackson, Albert C., Jasper (7).....               | *1947 to 1954 |
| Jones, J. Paul, Camden (1).....                   | *1950 to 1957 |
| Kennedy, Hughes, Jr., Birmingham (9).....         | *1950 to 1957 |
| Killingsworth, Noah W., Brundidge (2).....        | †1953 to 1959 |
| Leatherwood, Elbert F., Hayneville (2).....       | *1951 to 1958 |
| Lisenby, J. Otis, Atmore (2).....                 | *1950 to 1957 |
| Littlejohn, Wilmot S., Birmingham (9).....        | 1948 to 1955  |
| Mazyck, Arthur, Dothan (3).....                   | 1948 to 1955  |
| McCown, William G., Huntsville (8).....           | 1947 to 1954  |
| McNease, Benjamin W., Fayette (7).....            | 1947 to 1954  |
| Meadows, James A., Birmingham (9).....            | *1950 to 1957 |
| Moore, C. W. C., Talladega (4).....               | †1951 to 1957 |
| Morgan, J. Orville, Gadsden (5).....              | †1953 to 1959 |
| Morgan, J. Ralph, Birmingham (9).....             | *1950 to 1957 |
| Neal, Ralph D., Grove Hill (1).....               | 1948 to 1955  |
| Owings, W. J. B., Brent (6).....                  | *1948 to 1955 |
| Parker, Robert, Montgomery (2).....               | 1948 to 1955  |
| Partlow, Rufus C., Tuscaloosa (6).....            | *1950 to 1957 |
| Riggs, Frank W., Montgomery (2).....              | *1950 to 1957 |
| Riser, William H., Lafayette (5).....             | †1949 to 1955 |
| Roan, Avery M., Decatur (8).....                  | *1948 to 1955 |
| Robinson, E. Bryce, Fairfield (9).....            | 1948 to 1955  |
| Salter, Paul P., Eufaula (3).....                 | 1948 to 1955  |
| Salter, Wilbur M., Anniston (4).....              | †1948 to 1954 |
| Samford, Millard W., Opelika (3).....             | *1953 to 1960 |
| Segrest, Grady O., Mobile (1).....                | *1949 to 1956 |
| Sewell, John Ferris, Wetumpka (4).....            | *1947 to 1954 |
| Sherrill, John D., Birmingham (9).....            | †1953 to 1959 |
| Simpson, John W., Birmingham (9).....             | *1949 to 1956 |
| Smith, Gordon R., Ozark (3).....                  | †1948 to 1954 |
| Stabler, Lorenzo V., Greenville (2).....          | †1951 to 1957 |
| Stallworth, William A., Frisco City (1).....      | †1951 to 1957 |
| Thacker, Vincent J., Dothan (3).....              | †1949 to 1955 |
| Timberlake, Landon, Birmingham (9).....           | 1952 to 1959  |
| Underwood, S. Sellers, Birmingham (9).....        | 1949 to 1956  |
| Waters, Hinton W., Opp (2).....                   | †1953 to 1959 |
| Watson, Jerre, Anniston (4).....                  | †1952 to 1958 |
| Weldon, Joseph M., Mobile (1).....                | †1949 to 1955 |
| Whiteside, Maurice S., Cullman (7).....           | *1948 to 1955 |
| Wilkinson, Arthur F., Marlon (6).....             | 1950 to 1957  |
| Wilson, Frank C., Birmingham (9).....             | *1949 to 1956 |
| Woodruff, Gerald G., Anniston (4).....            | *1947 to 1954 |

Note: Vacancies created by resignations of Carl T. Jones (3) and Harry M. Simpson (8) will be filled at the 1954 meeting of the Association.

COUNSELLORS-ELECT

|   |              |
|---|--------------|
| Guest, Reuben J., Jr., Ft. Payne (5)..... | 1953 to 1960 |
| Johnson, Gayle T., Mobile (1).....        | 1953 to 1960 |
| Newton, George E., Prattville (4).....    | 1953 to 1960 |
| Parker, Leslie L., Andalusia (2).....     | 1953 to 1960 |
| Smith, J. Donald, Eutaw (6).....          | 1953 to 1960 |
| Treherne, Alfred J., Atmore (2).....      | 1953 to 1960 |
| Wilson, William E., Russellville (7)..... | 1953 to 1960 |

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1953, there were 1866 members in the County Medical Societies. That would give one Counsellor to every 19 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT

*Names of Counsellors*—W. T. Cocke, Marengo; W. J. Barber, Choctaw; R. D. Neal, Clarke; J. H. Baumhauer, G. O. Segrest, J. M. Weldon, Gayle T. Johnson and J. Mac Bell, Mobile; W. A. Stallworth, Monroe; J. Paul Jones, Wilcox.

| County           | Members | Counsellors |
|------------------|---------|-------------|
| Choctaw .....    | 6       | 1           |
| Clarke .....     | 8       | 1           |
| Marengo .....    | 13      | 1           |
| Mobile .....     | 187     | 5           |
| Monroe .....     | 8       | 1           |
| Washington ..... | 2       | 0           |
| Wilcox .....     | 7       | 1           |
|                  | 231     | 10          |

SECOND DISTRICT

*Names of Counsellors*—C. G. Godard, Baldwin; L. V. Stabler, Butler; W. R. Carter, Conecuh; L. L. Parker and H. W. Waters, Covington; J. C. Lisenby and A. J. Treherne, Escambia; E. F. Leatherwood, Lowndes; J. L. Branch, F. W. Riggs, J. M. Barnes, Robert Parker and D. G. Gill, Montgomery; N. W. Killingsworth, Pike.

| County           | Members | Counsellors |
|------------------|---------|-------------|
| Baldwin .....    | 24      | 1           |
| Butler .....     | 11      | 1           |
| Conecuh .....    | 9       | 1           |
| Covington .....  | 23      | 2           |
| Crenshaw .....   | 8       | 0           |
| Escambia .....   | 15      | 2           |
| Lowndes .....    | 4       | 1           |
| Montgomery ..... | 132     | 5           |
| Pike .....       | 17      | 1           |
|                  | 243     | 14          |



THIRD DISTRICT

*Names of Counsellors*—P. P. Salter, Barbour; E. L. Gibson, Coffee; G. R. Smith, Dale; E. T. Brunson, Geneva; V. J. Thacker and Arthur Mazzyck, Houston; F. H. Boyd and M. W. Samford, Lee; H. S. Holloway, Macon.

| County  | Members | Counsellors |
|---------|---------|-------------|
| Barbour | 11      | 1           |
| Bullock | 5       | 0           |
| Coffee  | 11      | 1           |
| Dale    | 10      | 1           |
| Geneva  | 15      | 1           |
| Henry   | 7       | 0           |
| Houston | 29      | 2           |
| Lee     | 22      | 2           |
| Macon   | 8       | 1           |
| Russell | 6       | 0           |
|         | 124     | 9           |

FOURTH DISTRICT

*Names of Counsellors*—G. E. Newton, Autauga; W. M. Salter, Jerre Watson and G. G. Woodruff, Calhoun; J. F. Alison and W. F. Harper, Dallas; J. F. Sewell, Elmore; C. W. C. Moore and D. P. Dixon, Talladega.

| County    | Members | Counsellors |
|-----------|---------|-------------|
| Autauga   | 5       | 1           |
| Calhoun   | 46      | 3           |
| Clay      | 6       | 0           |
| Coosa     | 3       | 0           |
| Dallas    | 39      | 2           |
| Elmore    | 12      | 1           |
| St. Clair | 10      | 0           |
| Talladega | 28      | 2           |
|           | 149     | 9           |

FIFTH DISTRICT

*Names of Counsellors*—W. H. Riser, Chambers; R. J. Guest, Jr., DeKalb; A. C. Gipson, J. O. Finney and J. O. Morgan, Etowah; A. L. Isbell and J. M. Crawford, Marshall; R. A. Foshee, Tallapoosa.

| County     | Members | Counsellors |
|------------|---------|-------------|
| Chambers   | 16      | 1           |
| Cherokee   | 2       | 0           |
| Cleburne   | 4       | 0           |
| DeKalb     | 17      | 1           |
| Etowah     | 64      | 3           |
| Marshall   | 23      | 2           |
| Randolph   | 8       | 0           |
| Tallapoosa | 20      | 1           |
|            | 154     | 8           |

SIXTH DISTRICT

*Names of Counsellors*—W. J. B. Owings, Bibb; W. C. Golden, Chilton; J. Donald Smith, Greene; M. H. Eskew and A. F. Wilkerson, Perry; C. T. Acker, Shelby; R. C. Hill, Sumter; J. P. Collier, R. C. Partlow and C. E. Abbott, Tuscaloosa.

| County  | Members | Counsellors |
|---------|---------|-------------|
| Bibb    | 5       | 1           |
| Chilton | 11      | 1           |
| Greene  | 5       | 1           |
| Hale    | 6       | 0           |

|            |     |    |
|------------|-----|----|
| Perry      | 11  | 2  |
| Shelby     | 15  | 1  |
| Sumter     | 15  | 1  |
| Tuscaloosa | 67  | 3  |
|            | 135 | 10 |

SEVENTH DISTRICT

*Names of Counsellors*—E. T. Brown, Blount; R. B. Dodson, J. G. Daves and M. S. Whiteside, Cullman; B. W. McNease, Fayette; W. E. Wilson, Franklin; M. C. Hollis, Marion; L. C. Davis, Pickens; A. C. Jackson and J. C. Gladney, Walker; R. Lee Hill, Winston.

| County   | Members | Counsellors |
|----------|---------|-------------|
| Blount   | 11      | 1           |
| Cullman  | 21      | 3           |
| Fayette  | 8       | 1           |
| Franklin | 13      | 1           |
| Lamar    | 11      | 0           |
| Marion   | 14      | 1           |
| Pickens  | 8       | 1           |
| Walker   | 28      | 2           |
| Winston  | 11      | 1           |
|          | 125     | 11          |

EIGHTH DISTRICT

*Names of Counsellors*—Rayford Hodges, Jackson; H. A. Darby and J. O. Belue, Limestone; W. G. McCown and C. A. Grote, Madison; E. M. Chenault, J. C. Bragg and A. M. Roan, Morgan.

| County     | Members | Counsellors |
|------------|---------|-------------|
| Colbert    | 21      | 0           |
| Jackson    | 11      | 1           |
| Lauderdale | 38      | 0           |
| Lawrence   | 9       | 0           |
| Limestone  | 11      | 2           |
| Madison    | 41      | 2           |
| Morgan     | 32      | 3           |
|            | 163     | 8           |

NINTH DISTRICT

*Names of Counsellors*—J. D. Sherrill, R. E. Cloud, C. N. Carraway, H. Earle Conwell, J. W. Simpson, F. C. Wilson, G. A. Denison, Hughes Kennedy, Jr., J. A. Meadows, Ralph Morgan, D. C. Donald, Joe M. Donald, E. G. Givhan, Jr., H. W. Allgood, W. A. Clyde, E. Bryce Robinson, W. S. Littlejohn, S. S. Underwood, and Landon Timberlake.

| County    | Members | Counsellors |
|-----------|---------|-------------|
| Jefferson | 542     | 19          |

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

| <i>Name and Address</i>          | <i>Date of Election</i> |
|----------------------------------|-------------------------|
| Andrew J. Coley, Oklahoma City   | 1909                    |
| Rudolph Matas, New Orleans       | 1921                    |
| Henry A. Christian, Boston       | 1921                    |
| H. A. Royster, Raleigh, N. C.    | 1926                    |
| G. Canby Robinson, Baltimore     | 1928                    |
| Russell L. Cecil, New York       | 1934                    |
| Frank H. Lahey, Boston           | 1937                    |
| T. M. McMillan, Philadelphia     | 1938                    |
| George T. Pack, New York         | 1939                    |
| E. V. McCollum, Baltimore        | 1940                    |
| Harvey B. Stone, Baltimore       | 1942                    |
| Albert C. Furstenberg, Ann Arbor | 1943                    |
| Alton Ochsner, New Orleans       | 1946                    |
| Reginald Fitz, Boston            | 1947                    |
| Andrew C. Ivy, Chicago           | 1948                    |
| Max Thorek, Chicago              | 1949                    |
| Paul D. White, Boston            | 1950                    |
| Emil Novak, Baltimore            | 1951                    |
| Richard Cattell, Boston          | 1952                    |

SCHEDULE OF THE ANNUAL SESSIONS  
AND PRESIDENTS SINCE THE RE-  
ORGANIZATION IN 1868

| <i>Place and President</i>            | <i>Year</i> |
|---------------------------------------|-------------|
| Selma—Albert Galatin Mabry            | 1868        |
| Mobile—Albert Galatin Mabry           | 1869        |
| Montgomery—Richard Frazer Michel      | 1870        |
| Mobile—Francis Armstrong Ross         | 1871        |
| Huntsville—Thomas Childress Osborne   | 1872        |
| Tuscaloosa—George Ernest Kumpe        | 1873        |
| Selma—George Augustus Ketchum         | 1874        |
| Montgomery—Job Sobieski Weatherly     | 1875        |
| Mobile—John Jefferson Dement          | 1876        |
| Birmingham—Edward Davies McDaniel     | 1877        |
| Eufaula—Peter Bryce                   | 1878        |
| Selma—Robert Dickens Webb             | 1879        |
| Huntsville—Edmond Pendleton Gaines    | 1880        |
| Montgomery—William Henry Anderson     | 1881        |
| Mobile—John Brown Gaston              | 1882        |
| Birmingham—Clifford Daniel Parke      | 1883        |
| Selma—Mortimer Harvey Jordan          | 1884        |
| Greenville—Benjamin Hogan Riggs       | 1885        |
| Anniston—Francis Marion Peterson      | 1886        |
| Tuscaloosa—Samuel Dibble Seelye       | 1887        |
| Montgomery—Edward Henry Sholl         | 1888        |
| Mobile—Milton Columbus Baldrige       | 1889        |
| Birmingham—Charles Higgs Franklin     | 1890        |
| Huntsville—William Henry Sanders      | 1891        |
| Montgomery—Benjamin James Baldwin     | 1892        |
| Selma—James Thomas Searcy             | 1893        |
| Birmingham—Thaddeus Lindley Robertson | 1894        |
| Mobile—Richard Matthew Fletcher       | 1895        |
| Montgomery—William Henry Johnston     | 1896        |
| Selma—Barkley Wallace Toole           | 1897        |
| Birmingham—Luther Leonidas Hill       | 1898        |
| Mobile—Henry Altamont Moody           | 1899        |
| Montgomery—John Clarke LeGrande       | 1900        |
| Selma—Russell McWhorter Cunningham    | 1901        |
| Birmingham—Edwin Lesley Marechal      | 1902        |
| Talladega—Glenn Andrews               | 1903        |
| Mobile—Matthew Bunyan Cameron         | 1904        |
| Montgomery—Capers Capehart Jones      | 1905        |
| Birmingham—Eugene DuBose Bondurant    | 1906        |
| Mobile—George Tighlman McWhorter      | 1907        |
| Montgomery—Samuel Wallace Welch       | 1908        |
| Birmingham—Benjamin Leon Wyman        | 1909        |
| Mobile—Wooten Moore Wilkerson         | 1910        |

|                                    |      |
|------------------------------------|------|
| Montgomery—Wyatt Heflin Blake      | 1911 |
| Birmingham—Lewis Coleman Morris    | 1912 |
| Mobile—Harry Tutwiler Inge         | 1913 |
| Montgomery—Robert S. Hill          | 1914 |
| Birmingham—Benjamin Britt Simms    | 1915 |
| Mobile—James Norment Baker         | 1916 |
| Montgomery—Henry Green             | 1917 |
| Birmingham—William Dempsey Partlow | 1918 |
| Mobile—Isaac LaFayette Watkins     | 1919 |
| Anniston—James Somerville McLester | 1920 |
| Montgomery—Louis William Johnston  | 1921 |
| Birmingham—Dyer F. Talley          | 1922 |
| Mobile—Walter S. Britt             | 1923 |
| Montgomery—W. W. Harper            | 1924 |
| Birmingham—J. D. Heacock           | 1925 |
| Mobile—C. A. Mohr                  | 1926 |
| Montgomery—A. L. Harlan            | 1927 |
| Birmingham—John D. S. Davis        | 1928 |
| Mobile—E. V. Caldwell              | 1929 |
| Montgomery—L. E. Broughton         | 1930 |
| Birmingham—W. G. Harrison          | 1931 |
| Mobile—Toulmin Gaines              | 1932 |
| Montgomery—Samuel Kirkpatrick      | 1933 |
| Birmingham—James R. Garber         | 1934 |
| Mobile—William M. Cunningham       | 1935 |
| Montgomery—Charles A. Thigpen      | 1936 |
| Birmingham—Lloyd Noland            | 1937 |
| Mobile—E. S. Sledge                | 1938 |
| Montgomery—Seale Harris, Sr.       | 1939 |
| Birmingham—M. S. Davie             | 1940 |
| Mobile—Samuel A. Gordon            | 1941 |
| Montgomery—James M. Mason          | 1942 |
| Birmingham—Harvey B. Searcy        | 1943 |
| Montgomery—Fred W. Wilkerson       | 1944 |
| Meeting Cancelled—Walter F. Scott  | 1945 |
| Birmingham—Walter F. Scott         | 1946 |
| Birmingham—Carl A. Grote           | 1947 |
| Mobile—Jesse P. Chapman            | 1948 |
| Montgomery—J. Paul Jones           | 1949 |
| Birmingham—Frank C. Wilson         | 1950 |
| Mobile—Joseph M. Weldon            | 1951 |
| Montgomery—T. Brannon Hubbard      | 1952 |
| Birmingham—B. W. McNease           | 1953 |

SECRETARIES OF THE ASSOCIATION

|           |                   |
|-----------|-------------------|
| 1852-1854 | George A. Ketchum |
| 1854-1855 | R. Miller         |
| 1869-1873 | Jerome Cochran    |
| 1874-1878 | B. H. Riggs       |
| 1879-1892 | T. A. Means       |
| 1893-1897 | J. R. Jordan      |
| 1897-1904 | G. P. Waller      |
| 1904-1906 | L. C. Morris      |
| 1906-1915 | J. N. Baker       |
| 1915-1923 | H. G. Perry       |
| 1923-1924 | Douglas L. Cannon |
| 1924-1930 | B. B. Simms       |
| 1930-1940 | Douglas L. Cannon |

TREASURERS OF THE ASSOCIATION

|           |               |
|-----------|---------------|
| 1854-1855 | W. P. Reese   |
| 1869-1898 | W. C. Jackson |
| 1898-1915 | H. G. Perry   |
| 1915-1939 | J. U. Ray     |

SECRETARY-TREASURERS OF THE  
ASSOCIATION

|       |                   |
|-------|-------------------|
| 1940- | Douglas L. Cannon |
|-------|-------------------|



### SCHEDULE OF JEROME COCHRAN LECTURERS

- 1899—J. T. Searcy, Tuscaloosa—What Is Insanity?  
 1900—Wm. Osler, Baltimore—Not present.  
 1901—Wm. Osler, Baltimore—Not present.  
 1902—Nathan Bozeman, New York—Declined.  
 1903—George H. Price, Nashville—The History of Medicine.  
 1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.  
 1905—Robert Abbe, New York—The Problems of Surgery.  
 1906—Joseph Collins, New York—Arteriosclerosis.  
 1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.  
 1908—E. L. Marechal, Mobile—Absent.  
 1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.  
 1910—Frank S. Meara, New York—Some Problems of Nutrition in Early Life.  
 1911—Rudolph Matas, New Orleans—Inflammatory Tuberculosis.  
 1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.  
 1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.  
 1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.  
 1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.  
 1916—Howard A. Kelly, Baltimore—Radium Therapy.  
 1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.  
 1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.  
 1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.  
 1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.  
 1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.  
 1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.  
 1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.  
 1924—James S. Stone, Boston—Abdominal Diagnoses in Children.  
 1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.  
 1926—Stewart Roberts, Atlanta—The Heart Muscle.  
 1927—G. Canby Robinson, Baltimore—The Mechanism of Heart Failure and Its Correction.  
 1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.  
 1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.  
 1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.  
 1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.

1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.

1934—Russell L. Cecil, New York—Present Trends in the Study of Rheumatic Fever and Rheumatoid Arthritis.

1935—George H. Semken, New York—A Consideration of Tumors of the Breast.

1936—William D. Partlow, Tuscaloosa—A Debt the World Owes Medical Science.

1937—Frank H. Lahey, Boston—Carcinoma of the Colon and Rectum.

1938—T. M. McMillan, Philadelphia—An Optimistic View of Some of the Problems of Heart Disease.

1939—George T. Pack, New York—Recent Advances in the Radiation Therapy of Cancer.

1940—E. V. McCollum, Baltimore—Some Contributions of Nutritional Research to Clinical Medicine.

1941—M. Y. Dabney, Birmingham—The Story of Breast Cancer.

1942—Harvey B. Stone, Baltimore—Biliary Diseases as Seen by a Surgeon.

1943—A. C. Furstenberg, Ann Arbor—Objectives in Medical Education.

1944—Tinsley R. Harrison, Dallas, Texas—The Value and Limitations of Laboratory Tests in the Practice of Medicine.

1945—Meeting Cancelled.

1946—Alton Ochsner, New Orleans—The Influence of Serendipity on Medicine.

1947—Reginald Fitz, Boston—The Early Characteristics of Certain Chronic Diseases.

1948—Andrew C. Ivy, Chicago—The Gallbladder in Health and Disease.

1949—Max Thorek, Chicago—Cholecystectomy: Its Technical Variations.

1950—Paul D. White, Boston—Historical Delays in the Application of Knowledge About the Heart.

1951—Emil Novak, Baltimore—The Relation of Hormones to Female Genital Tumors.

1952—Richard Cattell, Boston—Carcinoma of the Colon and Rectum.

1953—Champ Lyons, Birmingham—Metabolic Aspects of Convalescence.

### OFFICERS OF THE ASSOCIATION

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J. O. Morgan (1954) ..... Gadsden

#### PRESIDENT-ELECT

Joseph M. Donald (1955) ..... Birmingham

#### VICE-PRESIDENTS

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S. W. Windham (1955) ..... Dothan

T. J. Payne, Jr. (1956) ..... Jasper

W. R. Carter (1957) ..... Repton

#### SECRETARY-TREASURER

Douglas L. Cannon (1955) ..... Montgomery

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| J. D. Perdue (1954)         | Mobile     |
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|                   |            |
|-------------------|------------|
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|-------------------|------------|

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MEDICAL ASSOCIATION

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|---|------------|
| Delegate—J. Paul Jones                    | Camden     |
| Alternate—D. G. Gill                      | Montgomery |
| (Term: January 1, 1952-December 31, 1953) |            |

|   |            |
|---|------------|
| Delegate—C. A. Grote                      | Huntsville |
| Alternate—E. B. Robinson                  | Fairfield  |
| (Term: January 1, 1953-December 31, 1954) |            |

|   |            |
|---|------------|
| Delegate—J. Paul Jones                    | Camden     |
| Alternate—D. G. Gill                      | Montgomery |
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AND PUBLIC RELATIONS

|                                 |                   |
|---------------------------------|-------------------|
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| J. Paul Jones, Camden           | 1954              |
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| Francis M. Thigpen, Montgomery  | 1956              |
| H. L. Holley, Birmingham        | 1957              |
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| J. G. Daves, Cullman            | 1958              |
| A. C. Gipson, Gadsden           | 1958              |
| J. O. Morgan, Gadsden           | <i>ex officio</i> |
| Douglas L. Cannon, Montgomery   | <i>ex officio</i> |
| D. G. Gill, Montgomery          | <i>ex officio</i> |

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DEAFNESS

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REGISTRATION AT THE EIGHTY-FIFTH ANNUAL SESSION, BIRMINGHAM

APRIL 16-18, 1953

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| Burdeshaw, S. L., Headland   | Heacock, J. D., Birmingham | Rucker, E. W., Jr., Birmingham |
| Caldwell, E. V., Huntsville  | Heflin, Wyatt, Birmingham  | Sankey, H. J., Birmingham      |
| Cannon, D. L., Montgomery    | Howell, W. E., Haleyville  | Searcy, H. B., Tuscaloosa      |
| Chenault, Frank L., Decatur  | Howle, J. A., Hartselle    | Taylor, W. R., Town Creek      |
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Chenault, E. M., Decatur  
 Cloud, R. E., Birmingham  
 Clyde, W. A., Birmingham  
 Cocke, W. T., Demopolis  
 Collier, J. P., Tuscaloosa  
 Conwell, H. E., Birmingham  
 Crawford, J. M., Arab  
 Darby, H. A., Athens  
 Daves, J. G., Cullman  
 Davis, L. C., Gordo  
 Denison, G. A., Birmingham  
 Dixon, D. P., Talladega  
 Dodson, R. B., Cullman  
 Donald, D. C., Birmingham  
 Donald, J. M., Birmingham  
 Finney, J. O., Gadsden  
 Foshee, R. A., Alexander City,  
 Rt. 4  
 Gibson, E. L., Enterprise  
 Gill, D. G., Montgomery  
 Gipson, A. C., Gadsden  
 Givhan, E. G., Birmingham  
 Godard, C. G., Fairhope

Golden, W. C., Clanton  
 Gresham, W. A., Russellville  
 Hill, R. C., York  
 Hill, R. Lee, Haleyville  
 Hodges, Rayford, Scottsboro  
 Hollis, M. C., Winfield  
 Isbell, A. L., Albertville  
 Jackson, A. C., Jasper  
 Jones, J. P., Camden  
 Kennedy, Hughes, Jr., Birming-  
 ham  
 Killingsworth, N. W., Brundidge  
 Leatherwood, E. F., Hayneville  
 Littlejohn, W. S., Birmingham  
 Martin, J. A., Montgomery  
 McNease, B. W., Fayette  
 Meadows, J. A., Birmingham  
 Morgan, J. O., Gadsden  
 Morgan, J. R., Birmingham  
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 Parker, L. D., Andalusia  
 Parker, Robert, Montgomery  
 Partlow, R. C., Tuscaloosa

Perdue, J. D., Mobile  
 Riggs, F. W., Montgomery  
 Roan, A. M., Decatur  
 Robinson, E. B., Jr., Fairfield  
 Salter, P. P., Eufaula  
 Salter, W. M., Anniston  
 Samford, M. W., Opelika  
 Segrest, G. O., Mobile  
 Sewell, J. F., Wetumpka  
 Sherrill, J. D., Birmingham  
 Simpson, J. W., Birmingham  
 Smith, G. R., Ozark  
 Stabler, L. V., Greenville  
 Timberlake, Landon, Birming-  
 ham  
 Underwood, S. S., Birmingham  
 Watson, Jerre, Anniston  
 Waters, H. W., Opp  
 Weldon, J. M., Mobile  
 Whiteside, M. S., Cullman  
 Wilkerson, A. F., Marion  
 Wilson, F. C., Birmingham  
 Woodruff, G. G., Anniston

## DELEGATES

Autauga: R. K. Nichols, Pratt-  
 ville  
 Baldwin: W. P. Hitchcock, Bay  
 Minette; Julius Michaelson,  
 Foley  
 Bibb: J. Ethel Montgomery, West  
 Blocton; A. C. Pratt, Jr., Cen-  
 treville  
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 Bullock: F. M. Cronic, Hurts-  
 boro; C. Emfinger, Union  
 Springs  
 Calhoun: H. E. Gray, Anniston  
 Chambers: P. W. Auston, Shaw-  
 mut  
 Chilton: C. O. Lawrence, Clan-  
 ton; J. W. Moore, Clanton  
 Clay: C. P. Horn, Ashland  
 Cleburne: H. A. Foster, Heflin;  
 F. R. Wood, Heflin  
 Coffee: L. M. Johnson, Elba; A.  
 C. Touchy, Enterprise  
 Covington: C. N. Matthews, Flo-  
 rala; L. L. Parker, Andalusia  
 Crenshaw: L. A. Windham, Lu-  
 verne  
 Cullman: L. H. Clemmons, Cull-  
 man; F. C. Stitt, Cullman  
 Dale: A. D. Matthews, Ozark; L.  
 D. McLaughlin, Ozark  
 Dallas: G. W. F. Singleton, Sel-  
 ma  
 DeKalb: J. N. Chitwood, Fort  
 Payne; C. D. Killian, Fort  
 Payne  
 Elmore: E. O. Majure, Tallassee

Escambia: C. P. St. Amant, Jr.,  
 Atmore; A. J. Treherne, At-  
 more  
 Etowah: J. S. Bobo, Gadsden; S.  
 P. Simpson, Gadsden  
 Fayette: J. H. Ashcraft  
 Franklin: Price Clayton, Rus-  
 sellville; W. E. Wilson, Russell-  
 ville  
 Geneva: J. C. Miller, Geneva; T.  
 H. Williams, Hartford  
 Henry: J. R. Shell, Abbeville  
 Houston: J. F. Garner, Dothan;  
 S. W. Windham, Dothan  
 Jackson: M. H. Lynch, Scotts-  
 boro; E. L. Trammell, Scotts-  
 boro  
 Jefferson: W. E. Coleman, Birm-  
 ingham; J. A. Cunningham,  
 Birmingham; Hal Ferguson,  
 Birmingham; J. R. Horn, Jr.,  
 Bessemer; J. F. Jenkins, Jr.,  
 Birmingham; J. B. McLester,  
 Birmingham; J. C. Smith,  
 Birmingham  
 Lamar: W. L. Nixon, Sulligent  
 Lauderdale: M. C. Dunn, Flor-  
 ence; W. C. Simpson, Florence  
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 ton; J. A. Ussery, Courtland  
 Limestone: J. S. Crutcher, Jr.,  
 Athens; C. V. Mayhall, Athens  
 Lowndes: J. A. Sherrod, Jr.,  
 Hayneville  
 Madison: O. F. Gay, Huntsville  
 Marion: J. O. Brooks, Hamilton;  
 E. W. Couch, Winfield

Marshall: M. T. Hunt, Boaz; H.  
 L. Rogers, Albertville  
 Mobile: J. W. Donald, Mobile; J.  
 H. Little, Mobile; W. A. Yemm,  
 Mobile  
 Monroe: E. R. Cannon, Vreden-  
 burgh  
 Montgomery: J. M. Cameron,  
 Montgomery; Brannon Hub-  
 bard, Jr., Montgomery; W. L.  
 Smith, Montgomery; C. S.  
 Stickley, Montgomery  
 Morgan: M. E. Barrett, Decatur;  
 J. M. Chenault, Decatur  
 Perry: J. R. Dawson, Uniontown  
 Pickens: H. W. Hill, Carrollton  
 Pike: J. H. Colley, Troy; W. P.  
 Stewart, Troy  
 Randolph: G. C. Ussery, Roan-  
 oke  
 Shelby: L. H. Hubbard, Monte-  
 vallo; W. E. Stinson, Siluria  
 Sumter: J. H. Walker, York; S.  
 J. Williams, Livingston  
 Talladega: S. D. Davis, Talla-  
 dega; J. L. Thompson, Jr.,  
 Sylacauga  
 Tallapoosa: L. C. Meigs, Dade-  
 ville  
 Tuscaloosa: W. D. Anderson,  
 Tuscaloosa; W. J. Donald, Tus-  
 caloosa  
 Walker: Dyer Carlisle, Jr., Sip-  
 sey; A. M. Waldrop, Jasper  
 Wilcox: R. E. Dixon, Alberta  
 Winston: J. S. Snoddy, Haley-  
 ville; J. E. Wood, Haleyville

MEMBERS

A

Adams, M. V., Mobile  
Akin, J. M., Birmingham  
Alexander, J. W., Fairfield  
Anthony, J. C., Birmingham  
Armour, W. S., Birmingham

B

Baker, R. W., Dora  
Bankston, I. W., Scottsboro  
Barclift, W. C., Birmingham  
Barfield-Carter, Melson, Birmingham  
Barker, H. E., Boaz  
Barnes, E. B., Cullman  
Barron, J. M., Birmingham  
Batson, W. P., Birmingham  
Bayles, Louie E., Florence  
Beck, C. K., Troy  
Becton, J. A., Birmingham  
Beddow, W. H., Birmingham  
Bell, J. E., Trafford  
Berrey, I. C., Birmingham  
Blackwell, C. C., Birmingham  
Bledsoe, W. W., Eufaula  
Boggs, L. K., Birmingham  
Bostwick, J. L., Montgomery  
Boudreau, F. T., Mobile  
Boulware, T. M., Birmingham  
Brackin, O. D., Tuscumbia  
Bragg, E. G., Elba  
Brannon, R. M., Birmingham  
Brannon, W. T., Montgomery  
Branscomb, Louise, Birmingham  
Brantley, J. A., Troy  
Brock, Jack, Gadsden  
Brown, C. W., Birmingham  
Brown, H. M., Birmingham  
Browne, W. C., Vincent  
Burdeshaw, H. B., Dothan  
Burleson, P. W., Birmingham  
Burnett, J. M., Birmingham  
Burrett, J. B., Birmingham  
Burroughs, L. R., Jr., Birmingham  
Burttram, H. D., Birmingham  
Bush, J. D., Gadsden

C

Caldwell, H. E., Jefferson  
Callahan, Alston, Birmingham  
Callahan, J. S., Birmingham  
Cameron, J. E., Alexander City  
Camp, E. E., Huntsville  
Carmichael, J. C., Birmingham  
Carmichael, J. L., Birmingham  
Carmichael, J. N., Fairfield  
Carpenter, B. S., Fairfield  
Carraway, B. M., Birmingham  
Cermak, E. C., Birmingham  
Chambless, J. C., Cullman  
Chapman, J. A., Alexander City  
Chapman, J. P., Selma  
Chapman, J. R., East Tallassee  
Chase, L. S., Birmingham  
Chenoweth, A. I., Birmingham  
Childs, E. A., Birmingham

Clark, Jean, Vincent  
Clayton, O. W., Birmingham  
Clements, F. H., Birmingham  
Clements, R. M., Tuscaloosa  
Climo, H. J., Birmingham  
Cochrane, R. H., Jr., Tuscaloosa  
Cockerham, H. L., Jr., Huntsville  
Coe, H. D., Jr., Midland City  
Cohn, S. K., Birmingham  
Cole, L. G., Talladega  
Colley, J. O., Jr., Troy  
Collier, S. W., Birmingham  
Colquitt, C. J., Birmingham  
Comer, E. T., Eufaula  
Connell, I. L., Jacksonville, Fla.  
Cooley, B. S., Jr., Birmingham  
Cooley, B. S., Sr., Birmingham  
Cooley, H. N., Birmingham  
Copeland, M. A., Birmingham  
Coston, R. M., Birmingham  
Cowles, T. D., Troy  
Crenshaw, J. F., Birmingham  
Crowder, J. W., West Blocton

D

Daly, E. W., Birmingham  
Davidson, A. W., Bessemer  
Davidson, M. T., Birmingham  
Davie, N. T., Anniston  
Davis, J. A., Birmingham  
Davis, J. D., Aliceville  
Davis, J. E., Leeds  
Davis, J. S., Tuscaloosa  
Davis, J. W., Jr., Montgomery  
Davis, Luther, Jr., Tuscaloosa  
Davis, T. C., Huntsville  
Dawson, L. M., Birmingham  
Deaver, C. W., Birmingham  
Denson, F. H., Bessemer, Rt. 4  
Denton, R. O., Birmingham  
Dix, A. S., Mobile  
Donald, C. J., Jr., Birmingham  
Douglas, G. F., Birmingham  
Douglas, G. F., Jr., Birmingham  
Du Puy, A. J., Athens  
Durick, S. A., Bessemer  
Durrett, J. J., Birmingham

E

Earl, A. R., Mobile  
Eddins, W. W., Monroeville  
Edwards, W. A., Wetumpka  
Edwards, W. S., Birmingham  
Ehlert, W. E., Selma  
Elmore, J. D., Birmingham  
Eppes, J. K., Eufaula

F

Fargason, C. C., Birmingham  
Faucett, G. L., Gadsden  
Fisher, C. J., Birmingham  
Fisher, P. L., Birmingham  
Frazer, E. B., Mobile  
Freeman, A. M., Birmingham  
Frey, S. S., Birmingham  
Frommeyer, W. B., Jr., Birmingham

G

Galbraith, J. G., Birmingham  
Garrison, J. E., Birmingham  
Gartrell, L. S., Ashville  
Gayden, L. R., Montgomery  
Gilbert, Marvin, Birmingham  
Gilchrist, P. P., Mobile  
Gillespie, J. P., Gadsden  
Glenn, E. B., Birmingham  
Goldfarb, F. M., Mobile  
Goodall, A. G., Birmingham  
Goode, J. H., Tuscaloosa  
Goodman, Seaburt, Birmingham  
Goodwin, Paul, Bynum  
Graham, J. B., Birmingham  
Graham, S. E., Birmingham  
Green, A. H., Birmingham  
Green, R. C., Birmingham  
Grimes, O. R., Gadsden  
Guest, R. J., Jr., Fort Payne  
Guthrie, R. F., Birmingham

H

Hamner, L. H., Camp Hill  
Hamrick, R. A., Fairfield  
Hand, S. D., Athens  
Hardy, W. B., Birmingham  
Harris, E. A., Birmingham  
Harris, E. A., Bessemer  
Harris, F. W., Birmingham  
Harris, R. O., Mobile  
Harris, R. R., Birmingham  
Harris, W. M., Jr., Birmingham  
Harsh, J. F., Birmingham  
Hawthorne, R. O., Montgomery  
Henderson, H. H., Birmingham  
Herrod, H. G., Tuscaloosa  
Hicks, J. J., Birmingham  
Hill, L. L., Montgomery  
Hillhouse, J. L., Birmingham  
Hodges, E. J., Scottsboro  
Holley, H. L., Birmingham  
Holman, N. W., Ozark  
Hood, J. R., Birmingham  
Hope, J. C., Jr., Mobile  
Hopkins, P. I., Dothan  
Hudson, H. C., Birmingham  
Hughes, V. P., Cullman  
Humphries, J. M., Birmingham  
Hunt, M. C., Fairfax  
Hurst, J. C., Opp  
Hyman, Jack, Mobile

I

Irwin, W. H., Leeds  
Issos, D. N., Birmingham  
Ivey, W. H., Jasper

J

Jackson, A. F., Tuscaloosa  
Jarvis, J. R., Birmingham  
Johns, L. J., Birmingham  
Johnson, B. K., Birmingham  
Johnson, J. H., Clanton  
Johnston, I. L., Samson  
Jones, W. N., Birmingham  
Jordan, J. S., Birmingham  
Joseph, K. N., Birmingham



## K

Kaiser, E. N., Montgomery  
 Kay, F. A., Birmingham  
 Keller, F. G., Mobile  
 Kent, J. E., Birmingham  
 Kessler, C. R., Birmingham  
 Kimbrough, R. M., Birmingham  
 Kimmey, J. M., Elba  
 King, H. G., Tuscaloosa  
 Kinkead, K. J., Birmingham  
 Kirby, L. E., Birmingham  
 Kirkpatrick, S. M., Selma  
 Klapper, Margaret S., Birmingham  
 Knight, J. H., Birmingham

## L

Lamar, Clifford L., Birmingham  
 Langdon, H. R., Birmingham  
 Laslie, J. C., Montgomery  
 Laughlin, J. B., Huntsville  
 Lavender, C. W., Hartselle  
 Lawrence, W. E., Birmingham  
 Lawson, C. L., Gadsden  
 Lawson, Nettie B., Gadsden  
 Lee, J. M., Birmingham  
 Lee, L. T., Selma  
 Levi, I. P., Anniston  
 Lewis, H. J., Birmingham  
 Lewis, T. K., Birmingham  
 Leyden, H. A., Anniston  
 Lightfoot, P. M., Jr., Tuskegee  
 Linder, Hugh, Birmingham  
 Lineberry, E. D., Birmingham  
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## SUMMARY OF ANNUAL ATTENDANCE

| Year | Life Counsellors | Active Counsellors | Delegates | Members | Visitors | Total | Place      |
|------|------------------|--------------------|-----------|---------|----------|-------|------------|
| 1922 | 26               | 72                 | 76        | 314     | 68       | 556   | Birmingham |
| 1923 | 14               | 48                 | 66        | 106     | 50       | 284   | Mobile     |
| 1924 | 29               | 70                 | 84        | 230     | 79       | 492   | Montgomery |
| 1925 | 27               | 78                 | 97        | 328     | 113      | 643   | Birmingham |
| 1926 | 33               | 74                 | 105       | 194     | 131      | 537   | Mobile     |
| 1927 | 36               | 85                 | 104       | 252     | 87       | 564   | Montgomery |
| 1928 | 33               | 77                 | 108       | 507     | 106      | 831   | Birmingham |
| 1929 | 19               | 60                 | 102       | 176     | 109      | 466   | Mobile     |
| 1930 | 32               | 83                 | 106       | 286     | 102      | 609   | Montgomery |
| 1931 | 26               | 80                 | 116       | 410     | 158      | 790   | Birmingham |
| 1932 | 19               | 60                 | 101       | 158     | 133      | 471   | Mobile     |
| 1933 | 21               | 74                 | 103       | 264     | 85       | 547   | Montgomery |
| 1934 | 26               | 75                 | 97        | 404     | 53       | 655   | Birmingham |
| 1935 | 15               | 59                 | 91        | 180     | 83       | 428   | Mobile     |
| 1936 | 23               | 79                 | 95        | 265     | 68       | 530   | Montgomery |
| 1937 | 25               | 80                 | 96        | 396     | 81       | 678   | Birmingham |

| Year | Life Counsellors  | Active Counsellors | Delegates | Members | Visitors | Total | Place      |
|------|-------------------|--------------------|-----------|---------|----------|-------|------------|
| 1938 | 18                | 65                 | 78        | 157     | 63       | 381   | Mobile     |
| 1939 | 29                | 79                 | 96        | 326     | 84       | 614   | Montgomery |
| 1940 | 29                | 77                 | 105       | 401     | 229      | 841   | Birmingham |
| 1941 | 29                | 66                 | 86        | 211     | 91       | 483   | Mobile     |
| 1942 | 33                | 75                 | 105       | 249     | 82       | 544   | Montgomery |
| 1943 | 31                | 71                 | 83        | 321     | 127      | 633   | Birmingham |
| 1944 | 33                | 72                 | 92        | 214     | 110      | 521   | Montgomery |
| 1945 | Meeting Cancelled |                    |           |         |          |       |            |
| 1946 | 38                | 81                 | 87        | 330     | 127      | 663   | Birmingham |
| 1947 | 34                | 76                 | 91        | 333     | 124      | 658   | Birmingham |
| 1948 | 24                | 64                 | 87        | 239     | 127      | 541   | Mobile     |
| 1949 | 31                | 84                 | 93        | 288     | 106      | 602   | Montgomery |
| 1950 | 26                | 85                 | 91        | 391     | 118      | 711   | Birmingham |
| 1951 | 21                | 75                 | 84        | 281     | 115      | 576   | Mobile     |
| 1952 | 27                | 81                 | 90        | 314     | 141      | 653   | Montgomery |
| 1953 | 24                | 81                 | 91        | 403     | 129      | 728   | Birmingham |

## AMERICAN MEDICAL ASSOCIATION NEWS

EXPLORATORY OPERATION NEEDED TO  
DIAGNOSE SOME LUNG CANCERS

Early diagnosis and effective treatment of cancer of the lung require in some instances that an exploratory operation be accepted as a means of establishing definite diagnosis of localized pulmonary lesions, in the opinion of Drs. Philip E. Bernatz and O. Theron Clagett, Rochester, Minn.

Although chest x-rays and other nonsurgical diagnostic procedures have proved beneficial in determining some cancers of the lung, positive diagnosis in other cases only can be made by examination of the tissue involved, the doctors wrote in the May 30 Journal of the American Medical Association.

They reported on 356 cases of persons with localized pulmonary lesions operated upon between April 1947 and December 1951. An exploratory operation was necessary for definite diagnosis in 180 (50.6 per cent) of the patients. Of the 356 patients studied, 203 were found to have cancer of the lung.

"Thirty-seven of the 203 cases were symptomless," the doctors pointed out. "In only one of the 37 cases was the carcinoma inoperable at the time of exploration. On the other hand, in the remaining 166 cases of the

203, there were symptoms from the pulmonary carcinoma and, of these, in 59 (35 per cent) the lesion was inoperable."

The risk of such an exploratory operation is slight, and securing an accurate pathological diagnosis does not require sacrifice of normal pulmonary tissue, the doctors stated, adding:

"There were 11 deaths, a total hospital mortality rate of 3.1 per cent. All the deaths except one were of patients who underwent resection for malignant pulmonary lesions, and, in that one case, extensive pulmonary resection was necessary on a patient one year of age.

"Some patients may believe that they have much to lose if the thorax is explored and a benign lesion is found. They have life itself to lose, however, if a lesion of undetermined nature turns out to be malignant."

Although in 119 of the 356 cases studied by the doctors the lesions were benign, almost without exception they were of types best treated by resection, it was stated. A total of 30 different pathological conditions were found upon exploration.

Dr. Bernatz is a fellow in surgery, Mayo Foundation, and Dr. Clagett is associated with the division of surgery, Mayo Clinic.

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### THE JOURNAL OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

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